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ILLUSTRATIONS.

View of Hyde Park Mansions.—Messrs. C. Eales & Son, Architects 534-535
Design for an Exterior to the Church of St. Stephen, Walbrook 538-539
A House at Scarborough.—Messrs. W. Sugden & Son, Architects 542
David Playing before Saul.—Miss Ellen M. Rope, Sculptor 543
Sketches near Stamford 546
Sketches at the Ecclesiastical Art Exhibition, Portsmouth (Church Congress) 547

CONTENTS.

Classical Forms in Modern Architecture 523
Archæological News from Rome 524
The Railway Servants' Congress 525
Notes 526
Round Stamford 527
A Note on Sepulchral Symbolism 529
The "Mont Dore" of Bournemouth 529
Notes at the Church Congress Art-Exhibition at Portsmouth .. 530
Royal Institute of British Architects: Meeting of Associates .. 530
Competitions 532
No. 6, Hyde Park Mansions, Edgware-road 532
Sketches near Stamford 532
Design for an Exterior to the Church of St. Stephen, Walbrook, London 532
Wyndyate, Scarborough 532
Sculpture—"David Playing before Saul" 532
Sketches at the Ecclesiastical Art-Exhibition of the Church Congress 532
Old Elizabethan House, Darlington 549
Architectural Association *Conversazione* 549
Circular Hospital Wards 549
The Resistance of Building Materials to Frost 550
The "As You Like It" Grate 551
Buildings in Earthquake Countries 551
Dust and Refuse 552
The Supposed Portrait of Shakspeare 552
R.I.B.A. Charter 552
Provincial News 552
Church-Building News 552
Recent Patents 553
The Student's Column: Descriptive Geometry.—Part II. 554
Stained Glass 555
Recent Sales of Property 555
Meetings 555
Miscellanea 555
Prices Current of Materials 556

Classical Forms in Modern Architecture.

NOTHING in the history of art is more remarkable than the persistent vitality of the principal forms stamped upon architecture by the Greeks; or, if it is not quite correct to speak of persistency in a career in which there have been so many breaks, at least their perpetual and unexpected resurrection from time to time, after they have been supposed to have run their course and been decently interred. In one sense, indeed, their history since they were "carved out" by "the supreme Caucasian mind" may be considered an almost unbroken one, since the slender shaft of the Gothic builder claims a direct though long descent from the column of the Greek. The difference in stamp and expression between these two widely-separated members of the race is so great, however, and their actual æsthetic function so distinct,—the column being used to express resistance to vertical pressure, the vaulting shaft to simulate the absence of such pressure,—that it is only in a scientific sense that they can be regarded as related. But when the Gothic shaft had played itself out,—died of inanition, as it were,—up came the column again, with its faithful adherents the architrave, frieze, and cornice, like John Barleycorn risen from the dead, and ready to run a new race,—and a pretty long and important one too. Gothic has made a quasi-resurrection again in modern days, with so much blowing of trumpets that men have verily believed that Pagan forms were for ever beaten from the field; but Gothic has not been able to hold its own for more than a generation, though the revival has left influences behind it that will long be felt; and here once more are the column and capital and their adjuncts coming forward as persistently as ever. How are we to welcome them?

We spoke of the forms in question as stamped on architecture by the Greeks, for it is to the finish and polish given to all the details by that keenly-critical people that their value and vitality are due. The Egyptian forms, although they are now recognised as the raw material of Greek architecture, would never have acquired the hold over the world which the Greek edition of the same idea has obtained. They were too cumbersome, even in a purely æsthetic point of view, to have run the gauntlet of the criticism of ages, independently of constructive and economic considerations. The secret of the hold of the Greek forms over the admiration of so many generations is that they represent the architecture of refinement and culture. A cultured generation prefers such architecture to ruder, though more powerful, forms, and a cultured generation generally exercises considerable influence on the aggregate taste of the world in the times that succeed it. This was the secret of the great Classical revival of the Renaissance. Classic literature had fired the minds of the Renaissance scholars, and everything Classic was holy. Hence the adoption of the column and entablature as a mere ornamental facing to a building. It was pleasant to have it there, though only as a kind of scenic decoration, for it represented the beloved period of the apotheosis of culture. The Romans had, indeed, used Greek architecture in this scenic manner to a great extent; but the Renaissance architects carried it much further. The "order," in some form or other, was the Shibboleth of architecture. The application of it was the direct way to raise mere building to the level of architecture.

So far as this resulted in what may be called mere "Palladianism," it was an excusable weakness; hardly anything better. But the Renaissance really shows a good many types of treatment, of very varying value in regard to artistic effectiveness and logical character. The Palladian column, or pilaster, running up the face of a building, regardless of stories, is hardly defensible on any healthy theory of architectural design. But the introduction of columnar forms within the story, as a method of giving expression to the piers of the building, does not by any means come under the same category of offences. The fancied necessity of accompanying it by the full complement of architrave, frieze, and cornice, led in many cases to an exaggeration of the horizontal divisions of the building; but this mistake was not necessarily involved in the principle, and was sometimes avoided. The style associated with the reign of Francis I., and which has become rather popular lately, is really a very logical, and very pretty and graceful, adaptation of the idea of the Classic column to buildings which were not columnar. It achieved the additional success of making a real blending between features derived from Classic and features derived from Gothic work. It forms, in fact, a very good example of a successful attempt to adapt, rather than imitate, the features of a past style. The Renaissance on Italian soil, even when it escaped the formal and pèdantic method of Palladio, was much more imitative as to detail than the style created on French soil; but, as a general application of previously-existing features to new conditions, it was, in many of its forms, not only graceful and charming, as every one knows, but quite logically defensible, and does not deserve the doubtful countenance which some critics have turned upon it. Just as the flutings on a column give expression to the shaft of the column, so the column itself, introduced as a forming or shaping what would otherwise be a blank pier, gives expression to that pier. So far, it is an adaptation of forms originally invented for a more constructive purpose and expression, but capable, at least, of being not unfitly used in order to impart expression, by applying to a dead wall forms which have, by long association, become associated in our minds with the idea of the graceful support of superincumbent weight.

It is not very easy to realise, even to our own minds, how far the pleasing effect to our eyes of these Classic forms, used as means of expression, is really due to habit and association, and how far it is due to their inherent artistic refinement and suitability. The interest at present taken in many of the forms of Jacobean and subsequent styles or fashions of architecture, and their revival all round us, must be taken to be due almost entirely to association. It is curious to note Mr. Fergusson's remark, published only twelve years ago ("History of Modern Architecture," page 225), in regard to the taste of some of the châteaux of the Henri Quatre period. One specimen, he said, must suffice to illustrate the style, the elevation of the Château Gaillon. "It is impossible to conceive anything more fantastic or vulgar, and it is difficult to conceive how French taste could ever have sunk so low as to admire such a thing as this. . . . . Examples are only too common, and not only rival but surpass the absurdities of the Jacobean age in our country. . . . . At the present day we can hardly understand how architects could desert the constructive propriety and elegance of detail of the Middle Ages for such a style; still less how they could fancy they were reproducing Classic art when they did so." The Château Gaillon is, to our thinking, worse than anthing that can be credited to our own Jacobean or even Queen Anne age in England; but the word "absurdities" is not too strong to apply to many details of the English architecture of those periods, which are now being reproduced all round us, although only a little more than a decade ago a leading writer on architecture could say that "in the present day it is difficult to understand" how such things could ever have been admired.

All this is the fruit of going on mere association and impulse, rather than on critical judgment. The cutting up and corruption of classic detail, which is seen in the architecture referred to, had its origin in the mere desire of novelty, and it is revived from the desire,

springing from various causes, to revive the social and artistic associations of that period. This latter feeling was also at the bottom of the first classic revival of the Renaissance; but the details then revived were really artistic and logical for their original purpose, while much of the Jacobean detail could claim no such praise. The applications made of the Order and its appurtenances, as a means of architecturalising a building, were, on the other hand, often very unreasoning and illogical; but they gave the same sort of charm to the eye and taste that Latin quotations give to a speech; they may not have much to do with the main object, but they are graceful additions, and are evidence of scholarship, and give at least the appearance of propping up respectively an argument or an architrave in a decorative manner.

Has not the new classic revival (as we seem to be coming to it) something better to do with these beautiful materials of expression left us by the Greek or Latin mind, and as inextricably inwound into our architectural ideas as the Greek and Latin elements into our speech? The mere imitation of the features of the decadence of the Renaissance is, at all events, a task not worth the thought or abilities of an architect who looks for anything higher than commercial and fashionable success. If we are going to imitate, let us imitate the best forms, not the corrupt ones. There seems to be a vague idea that by taking these latter as a starting point we shall pave the way for originality and for new developments; that is to say, that is the defence made for the process sometimes, when a defence is asked for; though with the majority, probably, fashion rules the day. A more hopeful, and certainly a more intellectual, method of aiming at original development would be to take the original classic features in their best form, and consider whether we cannot make better modifications of them for our own purposes than were made by the architects of any period of the former Renaissance. If we look back at the history of the classic forms since the Renaissance, although there are many varieties in the way of applying the whole collection of features called the "Order," there is little variety in the treatment of their several parts, except what includes obvious inferiority to, and corruption of, the original forms. Surely there is something else to be done than this. It is hardly possible that we can beat the Corinthian capital, for instance, in its main design and idea as a decorative finish to a column in buildings of an ornate and graceful type; but is there really no leaf except the acanthus (if acanthus it be) which is capable of effective conventionalising for this purpose? Is not the classic form of capital, if we fairly take it in hand, capable of as much variety of treatment as the Early English capital? Not, of course, as much freedom in individual cases; symmetry must be preserved, or we lose the inherent character of the feature; but as much variety within its own lines. Are there no forms of fluting a column, or otherwise emphasising its vertical expression, but the two or three usually employed and mechanically repeated? Then, what does the column really represent? The special treatment of a cylindrical mass of stone, to express weight-bearing capacity in a graceful and suggestive manner. How about applying some of the same suggestions in treatment to such vertical masses as piers, in positions where columns would be unsuitable and superfluous? Many hints from columnar design might be borrowed and adapted for what we may call pier design; for, in spite of a certain esteemed Professor of Architecture, we hold that the pier and the column are two essentially distinct things. The experiment of using the entablature and surbase without the columns, the whole building forming the order, has often been tried; the special treatment of the pier masses not so often. The entablature offers many opportunities for new treatment. In most forms it is a mere survival, the frieze space having been originally the space for upper lights or openings, having necessarily a lintel over the columns and a second lintel over the frieze openings, so that the three-fold division of architrave, frieze, and cornice has become impressed upon the architectural mind of the modern world, and is religiously carried out, even when, in fact, they are only so many solid courses of stone or other material, one over the other, with no constructive necessity or excuse in their threefold arrangement. The eye has become used to the threefold division, and expects it, and there is a feeling of something wrong if it is not carried out; but this is only habit, and there is a considerable field for the designer of Classic cornices in bringing to them, when used without columns, new and modified treatment suitable to their altered circumstances. Even if we go back again to the actual built-up threefold arrangement of the Doric style (which in certain cases might have its practical *raison d'être* in connexion with the ventilation and lighting of the roof of a modern building), there is a good deal to be done in improving the supports between the lights, represented in the original Doric by the triglyph, which is the one feature in Doric architecture that has something clumsy and unsuitable for its position about it. It always suggests itself to us as the one remnant of the old wooden structure from which the wooden element has not been eliminated. It is not often possible to refine on Greek detail, it must be admitted, but it would certainly be possible to refine on the triglyph. But, without cherishing the ambition of refining, what we would suggest is that the adaptation and modification of the materials of what is called "Classic" architecture is an experiment of the highest interest and affording almost endless scope for thought and artistic invention in architecture; and that we are far more likely to arrive at originality combined with grace and expression (and no other sort of originality is worth the name) in that way than by picking up the broken fragments from the degradation of Classic architecture. The former method, however, does require much thought and study; the latter, no thought and little study.

ARCHÆOLOGICAL NEWS FROM ROME.*

IT becomes a harder task every year to overtake the ever-increasing strides of classical archæology. The annual publications of the German Archæological Institute at Rome lie before us in the usual form of "Annali, Bulletini, Monumenti." Each year the printed report increases in bulk, and, we are glad to be able to add, in interest. *Pari passu*, each year the plates of the published "Monumenti" advance, both in finished accuracy and in splendour of execution. A little while ago, it was possible for the reviewer to summarise, now he must be content to select.

Naturally, our eyes first turn to Corneto, the modern archæological Eldorado. Nor are we disappointed. Just at the mouth of a tomb not otherwise remarkable for its contents, the excavators were fortunate enough to find an amphora of the very early Attic style, of the date when Attic vase-painting was still under Corinthian influence. The vase is in the finest possible preservation; it contained, when it was found, a quantity of ashes and burned bones. The designs upon it are executed in a remarkably vigorous style, and we are glad to see that the beautiful coloured plates ("Monumenti," xii., 9, 10) lose scarcely anything of the freshness of the original. The chief interest of the vase lies, however, not so much in the style as the subject of the designs. On the obverse is represented the fight of the hero Herakles with the Amazons: on the reverse, the hunt of the Calydonian boar. In both cases, the names of the *dramatis personæ* are inscribed,—"Herakles" lifts his sword against the Amazon "Andromache," while to the right the comrade of Herakles, "Telamon," comes up with a second Amazon, "Lauke" (no doubt intended for Glauke); to the left, an Amazon, Iphito, is about to slay a nameless Greek. It will be seen that the contest falls, as usual in an archaic design, into a number of disjointed combats. This vase is the earliest yet known on which the Amazonomachia appears; to all students of the typography of the myth it will, therefore, have a special attraction. The design on the reverse, with the inscribed names, "Castor," "Peleus," "Melanion," and "Gorgos" (this last a dog), presents no deviation from the usual type.

Corneto has yet another contribution to offer. It is a noticeable factor in archæological progress that every new discovery brings with it a new era in the interpretation of already well-known monuments. Since the finding of the Praxitelean statue of Hermes carrying the child Dionysos, this subject of the nurture of the infant Dionysos has been rediscovered, so to speak, in a number of minor representations. In the present number of the Annali (Tav d'Agg., E. F.), Dr. Rohden, the well-known authority on terra cottas, publishes two,—the one from the lid of a terra-cotta box, the other from the cover of a mirror now in the Corneto Museum. On both, the designs are substantially the same; a youthful female figure seated to the right holds on her lap a naked child; the child clasps in his arms a cornucopia; to the left, evidently engaged in conversation with the maiden, a youth, who is scarcely more than a boy, leans against a column: on the terra cotta he is accompanied by a dog; on the mirror the space occupied by the dog is filled by a term. In the terra cotta there is nothing to characterise the youth: he might be Eros or Adonis, or, in fact, any chance shepherd boy making love to a maiden. Such would be the natural interpretation of the scene, but the Corneto mirror lends a different clue, and proves the boy no lover at all. On the pedestal of the pillar against which he leans is carved a caduceus, marking him undoubtedly as Hermes. This conventional, idle fashion of indicating rather than expressing a personality is common enough in late art: the artist chose any ready-made figure that lay to hand and added a symbol to characterise the particular god he wished. Given Hermes, and the rest of the scene is easy of interpretation. The child with the cornucopia is Dionysos, god of the fruitful earth; he is seated in the lap of one of the nymphs of Nysa: Hermes has just entrusted him to her care. Of course the special interest of the two designs lies in the fact of the same mythological *type* occurring on two monuments belonging to widely different classes,—the one Etruscan, the other Apulian. Dr. Rohden collates the remaining instances of similar representations of this myth, all of which are of about the same date, *i.e.*, the second or third centuries B.C.: a mirror case similar to that published by Dr. Rohden may be seen in the British Museum, and a terra cotta in the South Kensington Museum.

If the Hermes of Praxiteles has aroused new interest in the story of Dionysos and the nymphs of Nysa, still more the recent discoveries at Pergamos have prompted the systematic investigation of the far more obscure local mythology that gathers round the hero Telephos and his mother Auge. Until the discovery of the smaller Pergamene frieze, with its scenes from the life of Telephos, even to professed archæologists Telephos and Auge were but shadowy names. Recent excavations at Pompeii have added to our list of Auge representations two very interesting frescoes. The meaning of these frescoes would until quite recently have been matter of great uncertainty; in the light of the Pergamene discoveries there is no possibility for doubt. Both frescoes represent the same scene (Annali, 1855, Tav d'Agg., H. I.). To the left of the picture a woman crouches near a stream in the act of washing a garment, which she drops from her hands; she is surprised by a male figure advancing from the right. He catches her cloak, and she in terror clasps her attendant maiden, who seeks to warn off the intruder. This intruder is undoubtedly Herakles; he is sufficiently characterised by his lion's skin and club. He is in the act of surprising Auge. The son of Auge and Herakles, it will be remembered, was Telephos, mythical founder of Pergamos. At Pergamos there was a special shrine to Anges worshipped there as

* Annali, Bulletini, Monumenti dell' Institute di Correspondenza Archæologica, Anno 1834. Roma, 1885.

Eileithyia. The version of the rape of Auge followed by the painter is not the one followed by Euripides, and most commonly current. According to Euripides, it was within the precincts of a temple where Auge was serving as priestess that Herakles surprised her during a Dionysiac revel. The local version, however, ran that Auge was surprised at a fountain outside the temple, whither, no doubt, as the painter has depicted her, she had gone, like Nausikaa, to wash the family raiment. One figure in both frescoes remains unexplained. Behind the principal actors stands a tall female figure with wings, and an elaborately-rayed nimbus about her head. She must be some presiding local divinity. Dr. Man conjectures her to be the nymph of the mountain locality, Parthenion, where the incident took place. We think this attribution needs further evidence for confirmation.

Perhaps the most interesting contribution to this year's "Annali" is a paper by Dr. Froehner on two recently-discovered vases, one of which has passed into his own hands. The first of these, a kotylos of the fine red period, has, on the obverse, a design which, though not unknown on vases previously discovered, has always been regarded as enigmatic, or, at least, of uncertain interpretation; a slender maiden figure is in the act of rising out of the ground; she has emerged as far as the knees, and is daintily holding up with either hand her dress, which impedes her upward motion. At each side of her a satyr is gesticulating in wild wonder and delight at her appearance. The second vase, an amphora of late Lower Italy style, represents the head of a woman emerging in like fashion from the ground; to the right a satyr starts away with arms extended in surprise. Dr. Froehner's conjecture as to the meaning of these and similar designs seems to us to amount to a certainty. The maiden figure in each case he thinks to be Persephone uprising in the spring-time from her winter spent with Hades below the ground. This myth of the spring-time, — the uprising of Persephone,—took, we know, strong hold of the Greek mind, and from other monuments we know that in art form this uprising was represented in this simple, straightforward way. The only difficulty is the presence of the satyrs. We have to remember, however, that the worship of Demeter and Persephone was closely linked with that of Dionysos. Both were native divinities, and nothing could be more likely than that the return of the spring goddess should be welcomed by a wild satyric revel. The recurrence of the motive on repeated vase-paintings makes us sure that the juxtaposition was familiar to the popular mind.

We have confined our notice to the remains of Greek art; but, naturally, in a publication appearing at Rome, much space is given to Latin archæology. Dr. Jordan has an interesting paper on the votive cups (*pocula*), now numbering fourteen, signed with the name of a god or goddess in archaic Latin. These cups are of so uniform type, that, with the help of epigraphy, it is no difficult matter to fix their date. They are of black highly-glazed ware, decorated in white. The decoration mostly consists of a wreath of ivy leaves and a centre design, consisting of a Cupid, riding or driving some animal. Above the inscription, "Veneres pocolom Junonenes [*sic*] pocolom." The series of names are interesting, as showing the deities popular at the time (about the third century B.C.). We have, besides Juno and Venus, "Menerva," "Volcani," "Lavernai," "Salutes," "Aisclapi," "Fortunai," "Sæturni." These are familiar names, but the cups have given us two goddesses hitherto unknown, "Aecetiai" and "Coerai." Dr. Jordan believes we have here Æquitia, a sort of goddess rather of Fate than Justice in our sense, and Cura. The cups, we note, are found at Vulci, Corneto, Oste Chiusi, Rome, and even as far as Otranto. They were, no doubt, at one time, a wide-spread fashion, but probably a fashion that died with the inventive potter.

Dr. Hellig contributes a valuable paper on the origin of the Etruscans, a difficult subject peculiarly his own; his conclusions are based entirely on evidence that is monumental, not philological. Dr. Dressel gives an exhaustive account of the excavations carried on in the Necropolis at Alifae, to which last year we called attention; and the number closes with an article by Dr. Hülsen, on an ancient building near to the Church of St. Adrian at Rome.

THE RAILWAY SERVANTS' CONGRESS.

THE debates which have taken place at the Congress of the Railway Servants, at Leicester, have a ring of truth and earnestness which commands respect. The subjects brought forward are, for the most part, of pressing public importance; and their temperate and intelligent discussion, by the *élite* of that great army to whose patient vigilance the unrivalled safety of the railways of the United Kingdom is due, can not fail to have good results.

We have previously called attention to the contrast presented by the percentage of accidents to life and limb occurring to railway passengers and of those occurring to railway servants. One fatal accident in every six millions, and one non-fatal reported accident in every one and three-quarter millions of passengers in six months, contrast with one fatal accident in every 1,736, and one other reported accident in every 408 railway servants, in the same time. But in this simple way it is evident that the risk run by the latter is positively frightful. Nor can there be any doubt that the railway servants, — thus toiling for the public with their lives in their hands,—have gone straight to the main causes of the great danger that they undergo; or that their practical recommendations, if adopted, would remove grave sources of preventible danger.

First among these we are disposed to rank the absence of an automatic coupling arrangement between railway vehicles. The resolution of the Congress recommending the enforcement of this improvement, though strongly worded, is not too strongly worded. "In view of the appalling loss of life, and the large numbers of non-fatal injuries occurring annually to railway servants engaged in shunting operations, owing to the system of railway couplings now in use, this Congress urges the Legislature to confer power upon the Board of Trade to order the adoption of some system of improved coupling which will obviate the necessity and remove the danger of having to pass between vehicles for the purpose of coupling or uncoupling them." This is no vague unpractical suggestion. The present coupling, a double screw link, was invented in or about 1834, and was an admirably ingenious mode of doing what was then required, *i.e.*, drawing the carriages together so as to avoid those repeated shocks which attend the progress of trains that are not elastically bound together. But with the enormous increase of traffic, this link is, —or rather ought to be,—a thing of the past.

Side by side with this prime mechanical requirement we should rank the resolution proposed by the Hasland delegate to the effect that strict adherence to rules should be enforced, and that any rules which are not so enforced should be expunged from the order-book. Without now saying a word as to that constant struggle that many persons experience as to the feeing of the railway servants, we would point to the rules as to crossing the line. These are generally conspicuously placarded at every railway station, and no less generally openly broken by a scramble of porters over the rails, a little in advance of an incoming train. How many deaths are due to this permitted, if not enforced, foolhardiness, it is not easy to say. With the men there seems to be something of the excitement of a stiff leap in the hunting-field. But the danger they run is at the same time unnecessarily great, and demoralising, as an instance of contempt for regulations.

As to the proposal for the return of working railway men to Parliament, we must be content to refer our readers to the debates, only remarking that this forms only one case of a new problem regarding Parliamentary representation, the solution of which it would be very rash at the present moment to anticipate, It is by no means clear that a general assembly made up of a number of class specialists would prove an available institution. On the other hand, the value of special information is not to be despised, although it is usually of more use in Committees than in the House itself. We are content now to indicate that there are *pros* and *cons* as to this part of the proceedings of the Congress.

Less hesitation attaches to the complaints as to overwork. As to these, the railway servants have the warm sympathy of those who best know what work is and how much may be advantageously done by the workman, not only day after day, but year after year. But neither sympathy with men who seem in some cases to have been much overdriven, nor selfish remembrance of the personal risk to which each one of us, in the character of railway passengers, is exposed by any over-fatigue on the part of the railway servants, should lead us to overlook one consideration of primary importance. That is,—the difference in the working capacity of man and of machine, and the importance of so regulating the hours of work as to obtain the best results from the latter without overtasking the former.

There can be little doubt that this view of the case has been disastrously neglected; nor do we think it can be disputed that much of the present depression of industry is due to that fact. It may be matter for doubt what is the true economic maximum of the hours of labour, so far as a man is concerned. It is possible that fifty-four hours per week is,—if not the best possible, yet a fair and good allowance. Personal experience in the matter is rather in favour of short time, as far as the efficiency of the workman is concerned. Remarkably is this the case when we compare the long hours which are,—or which some years ago were,—worked by the French with the shorter English time. Trouble was found by English contractors in France from the fact that the French workmen refused to rest on Sunday, and there is much to show that fifty-four hours of steady English work were as productive as the eighty-four hours for which the Frenchmen demanded to be paid.

But the moment machinery comes into play, the case is altered. There are 168 hours in the week, and for every one of these hours during which machinery is idle, interest of money and many items of cost go on, and earning does not. Thus, where three shifts a day can be worked, the utmost is made both of man and of machinery. And the experience of the Irish Constabulary,—one of the finest bodies of men, perhaps, anywhere to be found,—and, indeed, that of our own Police force, is decidedly in favour of the physiological advantage of working in eight-hour, or even shorter, shifts.

In many cases, however, this method is inapplicable. The driver of a locomotive can not, for example, be expected or allowed to get off his foot-board when the clock strikes, irrespective of any other consideration. A railway is a machine which must work, in many cases, for eighteen hours out of the twenty-four, even if it is possible to secure a rest for the other six of them. The introduction of shifts as an inflexible rule would hardly be consistent, with regard to the safety of the public, or even to the interests of the railway servants themselves.

It remains, then, that without attempting to draw a hard-and-fast line, the managers and directors of railways should be induced to give very serious and pointed attention to the question of overtime. It is probable that this might best be done by making it compulsory to send in returns of every case in which a certain number of hours' work,—say, for example, sixty in the week,—was exacted from any person employed. A system of returns that would provoke inquiry on the part of some inspecting authority, in any case of real over-work, would probably be more effectual in the prevention of such a thing, except when needful for the public welfare, than any absolute, and sometimes mischievous, prohibition.

NOTES.

ON the 9th inst., the Wolverhampton Chamber of Commerce were engaged in considering the replies to be sent to the questions put to them by the Royal Commission on the Depression of Trade. It will be remembered that we drew attention to the suggestion made in various quarters that the Commission should include the subject of railway charges in their inquiry, and it seems that the body referred to regard the unequal railway and canal rates as the chief drawback to the trade of that district. While admitting that the falling off in business is partly due to successful competition of foreign producers in the markets abroad, they complain that the unfair charges for conveyance of goods by rail to the seaboard affects them to a still greater extent. The Black Country, and Wolverhampton in particular, may be regarded as the head-quarters of the recent successful movement against the Railway Rates and Charges Bill, the *Daily Telegraph* of February 18th last describing the manifesto emanating from the Wolverhampton Chamber as "exceptionally concise and clear," and the prominence given by them to this question in their reply to the Commission proves the reality of the grievance. They experience that most unsatisfactory side of English railway competition,—the coalition of the competing companies for the purpose of "keeping up" rates, it being a well-known fact that they are all bound by agreement to make no reduction in tariffs without each other's consent. In a paper read at Birmingham during the recent agitation, the extension and improvement of canals as competitors of the railways was strongly recommended, though it was remarked at the time that Parliamentary aid in redressing grievances was much more desirable; and it is noticeable that the Wolverhampton Chamber now adopt the latter recommendation and complain of charges by canal as well as by railway. Mr. G. W. Medley, in the pamphlet he has just issued on "Trade Depression, its Causes and its Remedies," also introduces this question, and it is evidently one that must be kept to the fore.

WITH a private prospectus for the issue of 8,000,000*l.* share capital, and 2,000,000*l.* borrowing powers, the Directors of the Manchester Ship Canal have issued a map of considerable interest. It covers an area of above 100 miles north and south, by 75 miles east and west, the nearest approach to the centre of which is occupied by Macclesfield. This busy and populous district reaches from Skipton on the north to Wolverhampton in the south, and from Rotherham and Sheffield on the east, to Wigan, St. Helen's and Chester, on the west. The numerous towns that it contains are represented by circles, of sizes proportionate to the populations; and the total number of the inhabitants amounts to 27 per cent. of the population of England and Wales. Manchester and Salford, nearly central as regards longitude on the map, contain 850,000 inhabitants, within a radius of five miles. Manchester is more than thirty miles nearer to the great manufacturing districts of Lancashire, Cheshire, Staffordshire, Derbyshire, and the West Riding than any existing port; and the saving, which ranges from 5s. 6d. per ton on timber, to 12s. 10d. per ton on sugar, effected by the maximum rates authorised by the Canal, over the present cost from ship in the Liverpool Docks to railway station at Manchester, is an object the proposal of which fully accounts for the enthusiasm awakened by the project in Manchester.

ALTHOUGH the Kensington magistrates in the Chiswick parapet wall case upheld the by-law, the proceedings seem to confirm a point of law, which is not very widely known among local authorities. It is that the magisterial bench has the descretionary power to set aside any by-law of a local authority,—even after such by-law has been drafted on the model and received the sanction of the Local Government Board, on the ground of its unreasonableness in a particular case. The magistrates can say whether the enforcement of a certain by-law in a particular case is a reasonable or an unreasonable exercise of the power of the Local Authority. The "particular case or circumstances" are the governing elements in the question; and therefore we may find, as we have seen in some recent cases, the magistrates in one instance upholding and in the other setting aside a certain by-law. Among the by-laws of many of the suburban Local Boards there is one which requires that houses within 15 ft. of each other should have their external walls carried up 1 ft. above the roof so as to form a parapet wall, which is intended to be a preventive against the spread of fire. In a case before the Croydon bench recently, in which a firm of builders were summoned by the Local Authority for non-compliance with this by-law, the magistrates set it aside; but in the Chiswick case the magistrates upheld the by-law. There are, however, apparent reasons for this difference in magisterial opinion in the particular circumstances of each case. In the Croydon case the houses were 9 ft. 6 in. apart, and it was admitted that they were situated in a comparatively rural part of the district. In the Chiswick case, however, the houses in one instance only 2 ft. and in another 1 ft. 11 in. apart, so that if a parapet wall were any protection against the spread of fire at all it was much more necessary in the Chiswick than in the Croydon case. On the ground that the parapet wall renders a substantial class and character of house unsightly in exterior, and harbours accumulations of snow and rain which get into and damage the interior, many builders have considerable objection to this by-law. It also suggests difference of opinion among the public as to its need or utility that the chairman of the Chiswick Board, who signed the by-laws, should appear in Court and assert that the by-law is unnecessary.

THE recently reported case of *in re* Dawdy, shows how necessary it is for persons making agreements which are intended to operate as submissions to arbitration to be careful of the language. The agreement in question was one between a landlord and a tenant, and was to the effect "that the tenant shall be paid, at the expiration of the tenancy, the usual and customary valuation as between outgoing and incoming tenant. And it is hereby mutually agreed and declared by and between the parties hereto that when any valuation of the covenants shall be made between the tenant and the landlord, the persons making such valuation shall take into consideration the state, &c., of the premises, and if not left in a proper and creditable state shall determine what sum of money shall be paid to the landlord as compensation therefor, and shall deduct such sum from the amount of the said valuation." The question arose if this was a submission to arbitration so as to be capable of being made a rule of Court. The Court of Appeal held that it was simply an agreement for the appointment of valuers, and not arbitrators, that their functions were not judicial, and that, this being so, the attempt to make this a rule of Court failed. To many persons, the agreement at first sight would appear to be a submission, but when we remember that arbitrators are judges, it is clear that the document did not go to the length contended for.

WE can hardly concur in the decision embodied in the report passed by the meeting of Associates of the Institute on Monday last, to require that Associates should be allowed a vote in regard to all by-laws affecting their interests. A by-law once passed becomes a very importnta engine in the working of a society, and it is hardly to be contemplated that the senior class of members should put themselves in the position of allowing a by-law to be passed against their wish by a numerical majority of the junior class. Nor is it practicable or logical to propose to divide by-laws into two classes. There would probably arise on this, from time to time, troublesome questions as to whether this or that by-law did or did not affect the privileges of the Associates. Nor is it any more practical or business-like to propose to right the discrepancy of power by giving the Fellows two votes and the Associates one. This is a kind of fancy legislation which will never work, as in fact the meeting seemed to think, the resolution embodying this idea finding no seconder. Mr. Richards Julian's enumeration of the new advantages which the Associate Members will already receive from the new Charter indicated an advance in their iufluence in the Institute which ought to satisfy all reasonable expectations.

A PICTURE by Rubens is stated to have been discovered at Alost (Belgium). It represents "Christ Blessing the World," and bears the painter's name, and the date 1614. It is 31 in. high and 24 in. wide. About twelve years ago it was bought for one franc in the sale of the furniture of an old doctor by a tailor of the name of Michiels, who, although it was begrimed with smoke and dirt, hung it up, but did not take any further notice of it. Quite recently it was accidentally seen by a painter, more closely examined, and, after being cleaned, found to be a genuine Rubens. The owner has been offered fabulous sums for the picture.

WE have received two numbers of a very handsome portfolio of forty photographs of the house and furniture which the late Mr. Burges designed for himself, and of which illustrations in this form are being published by subscription, under the editorship of Mr. Pullan. Mr. Burges, in designing and furnishing this house, made it, as is well known, a kind of repository and exponent of his ideas and sympathies in regard to domestic Gothic art. In this respect the work now published is of the greatest interest and suggestiveness; for whatever difference of opinion there may be about Burges's style and taste, it must be admitted by all that he is never commonplace; everything he touched was stamped with the mark of a strong artistic individuality. This is nowhere better displayed than in his designs for the decorative detail of furniture, church plate, and other articles offering scope for artistic treatment. The exterior design of his house is not remarkable architecturally; the interior is full of remarkable things, many of which are admirably illustrated in these photographs. The solidity and weight of expression in his furniture designs is, perhaps, over-accentuated. It is full of a kind of grim force, but it is certainly not the expression of the highest civilisation; it represents rather a comfortable but defiant nineteenth-century Mediævalism. Distinct faults of taste may be discovered here and there; for instance, in the library bookcase, to divide up the edge of the side framing of the bookcase with jointing in imitation of masonry, and to continue this jointing over the convex surface of the foot, is a piece of eccentricity which seems to us quite indefensible. Nor certainly can we join Mr. Pullan in his admiration for the painted sculpture in the reredos at Waltham Abbey, which he calls the best of all Mr. Burges's sculpture designs. If so, the only conclusion can be that Burges had better not have meddled with sculpture. But these drawbacks do not detract from the interest of a publication which represents more fully than any other the most pronounced Mediæval art-culture to which the modern Mediæval movement gave rise. Others may have played at Mediævalism; Burges really took it into his nature, as far as art was concerned, and almost out-did the Middle-Age artists in force and piquancy.

WE have received the following letter from "A Mason":—

"I was employed at the bank and shops at —— as a stonemason, to fix terra cotta. Shortly afterwards the bricklayers struck against us for setting the terra cotta. Now, sir, I wish to ask if you can give me any information on this very vexatious question between masons and bricklayers? Mr. ——, the builder, offered one half to the bricklayers, and the other half to the masons, which was not accepted by the former; therefore we were discharged."

This is an old dispute, and one not creditable

to the artisans who raise the grievance. Once upon a time those working under a responsible chief would have accepted his orders as to which should do any particular portion of the work. We have, of course, got long past that; but the plain fact is, that terra cotta, if it be decorative work, involves much more skilled work in setting than ordinary bricklaying, and ordinary bricklayers are not competent to execute it. Although the material is much more like brick than stone, the work is analogous to the better class of masons' work. The bricklayers, in claiming to do it, are claiming the right to execute what in all probability they would do badly, and what requires the assistance of skilled masons, or artisans of equal training and experience. It is the nature of the work, not the chemical composition of the material, that is to be considered.

SIGNOR GIACOMO BONI, of Venice, to whom we owe a spirited protest against the proposed demolition of the ancient fortications of Bassano, which was noticed in these columns at the time it appeared in print, has just published an interesting little pamphlet, reprinted from *Archivio Veneto* (2nd series), vol. xxix., part ii., giving the results obtained from excavations made in the month of July last for the purpose of ascertaining the nature of the foundation of the Campanile in the Piazza of St. Mark at Venice. These excavations were made at the suggestion of Mr. Blackall, of Boston, who was desirous of obtaining information with regard to the substructure of ancient buildings in Venice, with a view to the application of the principles observed to buildings in his native city, the soil of which bears some resemblance to that of Venice. These excavations were carried out under the direction of Signor Boni, who carefully noted every fact observed during their progress with pen and pencil. The cost of the labour and planking was defrayed by Mr. Blackall, with the assistance of a small contribution to the cost of labour from the Cavaliere Ongania, who is preparing an illustrated work on the basilica of St. Mark, ncluding the Campanile.

IN the Museum at Vienna there is a remarkable bronze statue now being exhibited, which is generally believed to be a relic dating from the old Persian period. The statue is in a tolerably good condition, and represents a man astride on a kneeling bull, both front and hind legs of the animal being completely under the body. This position recalls the horse and bull capitals of columns at Persepolis. The attitude of the man is somewhat analogous to the majority of those reliefs of the ruined city. The large quantity of hair covering the neck and shoulders,as well as the shape of the hat, appear precisely similar. Unfortunately, a portion of the forehead is missing, as are likewise the arms reaching from the hands to the elbows. The ornamental design and the stiff drapery show a striking resemblance to the extant monuments of Assyrian art.

THE Naval and Military Club, Piccadilly, has been the first of this class of buildings in London to adopt electricity as a means of lighting. The installation has been carried out by Messrs. Verity & Sons. Some old stables in the rear of the house have been removed to make way for an engine-house. Two engines and dynamos are supplied, either of which is sufficient to light the whole house, but they are coupled so as to give greater security. There are also fifty large accumulators, to provide against any possible stoppage of the machinery. Incandescent lamps of the Edison type are used. This spirited move of the Naval and Military Club will no doubt be followed before long by other clubs. Indeed, we understand the same firm have already a contract for lighting the new Constitutional Club when completed.

ACCORDING to the Vienna *Allgemeine Zeitung*, a fresco, representing the Crowning of Christ with Thorns, was recently discovered by some workmen whilst engaged in repairing the cathedral at Gratz, the capital town of Styria. The fresco is in excellent preservation, and is surrounded by a piece of sculpture, believed to have been erected in honour of a bishop who died about the year 1570.

IN the "Notes" in the *Builder* for June 20th of this year we alluded to the fact that a fund of 6,000*l.*, in the hands of the Vestry of the Parish of St. James, Westminster, had been set apart for the purpose of erecting model dwellings suited to the wants of the labouring poor in that parish, and that four architects, selected for special experience in that class of work, had been invited to enter into a limited competition for carrying out these dwellings. We are now able to state that the plans by Mr. H. H. Collins have been selected for the purpose and will be carried out. The three other architects invited to send plans were Mr. E. C. Robins, Mr. Ernest Turner, and Mr. Eyton. The site is at the corner of Silver-place and Ingestre-place.

THE *Journal of the Clerks of Works' Association* very justifiably animadverts upon the ridiculously inadequate salaries sometimes offered by public bodies or quasi-public bodies to "clerks of works." A case is cited in which the remuneration offered by certain bridge trustees to a clerk of works was,—a pound a week! Such an "estimate of value" as this betrays either an utter ignorance or a total disregard of the fact that the prime essentials in a clerk of works are ability *and* integrity. The *Journal* observes:—

"There are clerks of works and clerks of works, not only good, bad, and indifferent, but of half a dozen intermediate grades, and there always will be, so long as totally inadequate salaries are paid for positions whose occupants need a large amount of technical knowledge, and upon whom it is almost* a necessity that implicit reliance should be placed. This is understood by none better than by architects, and if the latter were always in a position to employ whom they thought proper, and to pay what they considered a fair equivalent, thereby creating justifiable expectations of securing thoroughly capable and trustworthy representatives, clerks of works, as a body, would become more efficient than, it must be admitted, a great many are at the present time."

THE Architectural Association of Minnesota are the pioneers of a new movement in mensuration. They have passed a resolution to the effect "That on and after the 1st day of January, A.D., 1886, the members of the Architectural Association of Minnesota abandon the system of measurement by feet and inches, and adopt a system of measurement by feet and decimal parts of a foot." Also, "That the Secretary notify all the leading architectural journals of the United States and the local papers of this action of the Architectural Association of Minnesota." We should doubt if the game were worth the candle. The inch has lived long, and will die hard.

WE published a little while since an illustration of a form of ship projected for the object of carrying away the London sewage day by day and quietly slipping it into the sea at a distance from the coast. Mr. J. O. Phillips, the general manager of the Gas Light and Coke Company, suggests, in a letter to the *Times*, an even more immediate application of the method, without building any specially-contrived vessels. He proposes that the empty coal-lighters of his Company should take all the sewage away, in the form of dried cakes, with the moisture pressed out, on their return voyages, shovelling it overboard on the way. Whether sewage is a commercially marketable commodity is a question into which Mr. Phillips does not undertake to enter. What he says is, as a summing up, that "if the Metropolitan Board of Works choose to deliver daily some 1,200 to 1,500 tons of dry and inodorous cake or slab into the railway trucks of the Gas Light and Coke Company, alongside the presses, and to pay the necessary and comparatively moderate price for the work, the Company can most unquestionably ship and dispose of it for them at sea." There is one point Mr. Phillips does not touch upon,—perhaps he has satisfied himself upon it,—will the press-dried sewage sink or float? "That would be scanned," as Hamlet says. If it floats, what a pleasant line of sea-voyage that would eventually become, between the Thames and the Tyne.

* "Almost"! Surely this is a misprint for "absolutely"?

ROUND STAMFORD.

A FEW months ago the members of a small architectural club met at Stamford and passed one or two pleasant days in exploring the neighbourhood. The subjoined sketches are selected from those made on the occasion.

Among the buildings examined was the Manor House at Woodcroft, which dates from the time of Edward I.* There is not much detail left, and what remains is of a simple and severe character. The most notable feature is the round tower at the corner, which rises abruptly from the moat, over which hang dense masses of yew, giving the place a sombre and melancholy aspect, strictly in keeping with its history. Here occurred one of those incidents of the Civil Wars, which, though it serves to amuse the present generation, must have been sufficiently horrible to those concerned. Dr. Michael Hudson, one of Charles I.'s chaplains, having, at the head of a small body of men, endeavoured to harass the forces of the Parliament, was finally compelled to retreat to Woodcroft for protection. Here he was speedily attacked, and driven gradually from floor to floor, till at length he and his surviving comrades stood at bay on the roof of the tower. Being at length wounded and overpowered, he was flung over the battlements, but managed to cling to a projecting gurgoyle till his fingers were chopped off, when he fell into the moat below. Here he is said to have begged to be allowed at least to die on dry land, and attempted to swim to shore; but his assailants granted him no mercy, and despatched him with their pikes. Perhaps, under the circumstances, this was true kindness, for not only had he lost his fingers, but, according to one account, the upper part of his face had fallen over the lower through a tremendous wound. Readers of "Woodstock" will, no doubt, recognise in this legend the source from which Dr. Rochecliffe's most exciting adventure is derived.

Not far from Woodcroft is the village of Northborough, where stands a building of much greater interest, architecturally speaking. Next the road is a great recessed gateway, in which are the usual large and small doors; passing through the gate, the visitor finds himself in a small irregular court-yard, with the old Manor-house in front of him (see lithograph). The porch, the buttress between the tall windows, the crocketed gable, and octagonal chimney, combine to produce a group of unusual interest. Indoors, the original arrangements have been considerably modified; but the old wooden screen of the hall remains, as well as the doors to the kitchen and buttery. The side of the court-yard next the road is formed by the stables, said to have been built out of the ruins of the upper part of the gate-house. On one of the gables, a sun-dial serves as a finial. The idea is, perhaps, more commendable than the delicacy with which it has been carried out.

The ancient lords of Northborough were a sturdy race, and one of their number, Geoffrey de la Mare, who flourished in the early years of the fourteenth century, stands prominently forward by reason of an action he brought against the Abbot of Peterborough to recover the constableship of the abbey. A perusal of the privileges appertaining to that office throws a curious, and even entertaining light, on the manner in which those grim barons lived and gained their means of living. "By virtue of this office," says Bridges, "he claimed the privilege of commanding the men with which the convent furnished the king's army in war, being supplied for that purpose, with horses, armour, and whatever else was needful for himself and one knight; of setting the first dish on the table before the abbot, at the installation dinner of every newly-elected abbot [a curious privilege for a haughty baron to claim; but see the reason why], and of taking to his own use all the gold and silver vessels that should be then placed on the abbot's table; with the liberty of sojourning in the abbey, as long as

* See lithographed sheet of sketches in this number.

he pleased, with three esquires, six grooms, five horses, one great horse for the saddle, and two greyhounds; and of being found, at the cost and charges of the abbey, in bread, wine, beer, flesh, fish, hay, and oats, and all other necessaries; with an allowance of two robes from the abbot's wardrobe, or 4*l.* in lieu of them. Afterwards an agreement was entered into, by which the said Geoffrey de la Mare, in consideration of sixty marks sterling, quitted his pretensions to the said constableship, at the same time renouncing all right to materials from the convent's woods at Peychirche, either for repairs or fireing, at his manors of Makeseye, Wodecroft, and Northburg."

A curious picture this of the military warrior with his three esquires and six grooms, arriving on their five horses and one great saddle-horse, and followed by their two greyhounds, demanding board and lodging from a pampered abbot for an indefinite term. If there had been a horse too many, or if the dogs had been other than greyhounds, would the abbot have been justified in shutting the abbey door in the face of my lord and leaving him in the cold till he complied with the articles of his agreement? or would he have charged something extra for the odd horse and for the dogs too, they not being greyhounds? And think of parting with all that array of privileges for sixty marks down! There must have been sad disappointment behind those windows by the buttress when Geoffrey de la Mare came home one evening and told his wife and family that he had compromised the matter for such a paltry sum; for 60 marks is but 40*l.*, not a vast sum even in those days.

Besides the old Manor House the church is well worth a visit, in order to see the Claypole Chapel, a very beautiful piece of Decorated work, with an ossuary beneath it. In the church lies buried the wife of Oliver Cromwell, her daughter Elizabeth having married John Claypole, who lived at the Manor House.

Stamford itself is too well described in local histories and guide-books to render anything but a cursory notice necessary. It is a quaint place, full of churches and almshouses, and retaining a considerable number of old street-fronts, but nothing of the first rank. The churches are tolerably interesting; and, as a sign of the fluctuation of fashion or taste, it may be mentioned that the Late Tower of All Saints found more favour than the Early one of St. Mary's. Ten or fifteen years ago All Saints' would have been slighted, and St. Mary's alone

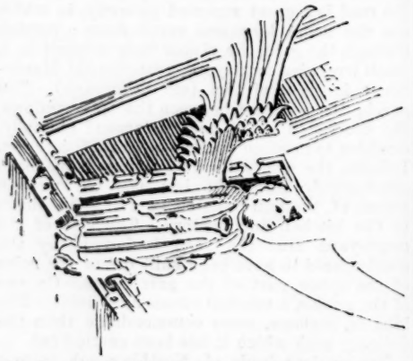


Fig. 1.—*Roof of South Aisle, St. John's, Stamford.*

would have received attention. Fig. 1 shows an angel from the roof of St. John's Church. The two things that gave most satisfaction, however, were the carving on the Perpendicular tomb of Sir David Phillips in St. Mary's, and the lovely stained glass in Brown's Hospital. All these are on the north, or Lincolnshire side of the Welland. On the south, or Northamptonshire, side, is St. Martin's Church, where lies buried under a splendid tomb* the great Lord Treasurer Burghley, who died in 1598, and close to the river are the Burghley Almshouses, a picturesque group (see lithographed sketches).

Brown's Hospital, of which the glass was so much admired, is well worth a visit, not only on account of the pleasant old-fashioned atmosphere which pervades the place (largely owing to its judicious restoration by Mr. Fowler, of Louth), but also because of the curious arrangement of the chapel and its adjuncts. The chapel forms one end of a long range of building next the street, and it extends from ground to roof, embracing the two floors into which the rest of the building is divided. A screen separates the chapel from the adjacent rooms, and was so arranged that the patients as they lay in bed could hear and perhaps see the ceremony of the mass, the most sacred rite of the Roman Catholic Church. The chapel is still in use for a purpose similar to that which it first served, but the long, admirably-proportioned rooms adjoining are now devoted chiefly to eating.

Of course, the great sight to see at Stamford is Burghley House, and yet, with deference be it spoken, it fails to give entire satisfaction. It may safely be attributed to John Thorpe,—quite as much as the bulk of the work assigned to him,—but it is not one of his happiest efforts. The grouping is faulty, and the detail not so piquant as usual. This unfavourable impression may partly arise from the immediate surroundings. The approach and the enclosed lawns do not tend to set the house off, and their effect is poor in comparison with the broad walks and terraces of Hatfield. But, in spite of this, Burghley is, and always will be, a magnificent place, stored with treasures of every description,—pictures, tapestry, needlework, furniture, bric-à-brac,—enough to last a score of connoisseurs for a lifetime. There is very little of the original work visible inside. Everything is of later date, and most of the doorways show the handiwork of Grinling Gibbons.

A pleasant walk across the park, through some good iron gates (fig. 2), leads finally to

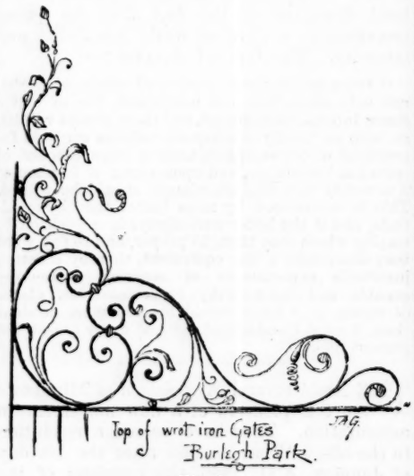


Fig. 2.

Wothorpe, where are the ruins of the Burghley Dower-house, built between 1600 and 1620 by Thomas Cecil, first Earl of Exeter, as he said, "to retire out of the dust while his great house at Burghley was a-sweeping." Not a great deal is left now besides the four towers, but when complete, Wothorpe must have been quite as interesting as Burghley, so far as its architecture was concerned. Richardson devotes several plates of his "Mansions" to Wothorpe, and gives a plan and many interesting details.

A charming drive through several typical Northamptonshire villages leads to Deene, beyond which, at a distance of a mile or so, is Kirby Hall. It lies in a hollow not far from a small brook, which, formerly widened and straightened, flowed beneath a handsome bridge, of which only the arches remain. At a little distance in the fields are many fruit-trees; when we saw them, covered with blossom,—the remains of the orchard. The house itself, at every visit, shows another "monstrous cantle" gone. But the noble courtyard, so often illustrated, still remains in good preservation, as also do most of the external walls. John Thorpe laid the first stone of Kirby, in 1570, for Sir Humfrey Stafford, who, a few years later, sold it to Sir Christopher Hatton, one of Queen Elizabeth's favourites, into whose good graces he danced his way. Of Kirby, Gray's well-known lines might have been written, with as much truth as of the house at Stoke-Pogis. The Hattons "modernised" their house with the help of Inigo Jones, who rebuilt the principal external façade, and added several features to the courtyard in 1638–40. He also introduced several fine plaster ceilings, now rapidly going to decay; and under his care the whole of the internal woodwork was executed,—at any rate, it is all of his date. A comparison of his work with Thorpe's shows how native originality was already evaporating and being replaced by the tame purism which did all it could to stifle English architecture until the nineteenth century began to sketch.

In the village of Deene itself is the hall, chiefly Late Tudor, but not open to public inspection; and the inn, once the dower-house of the Cardigans, containing several good chimney-pieces and some plaster-work, all of early in last century. The church is worth a visit, if only to see the seventeenth-century reredos.

King's Cliffe, though marked in large letters on the Ordnance map, is but an unimportant and rather uninteresting village. However, thanks to the Thorp family, who have a curious epitaph in the church, the visitor can extract some little amusement from a tumble-down cottage, or almshouse, whereon is this quaint and somewhat pompous inscription, of which the sentiment is better than the Latin:—

Aedificavit	charitas
Inhabitavit	paupertas
Ornabit	honestas
Durabit	omnis ætas

Ex dono Johannis Thorp arm. Ano. 1668.

King's Cliffe boasts a considerable antiquity, though it has not preserved any relics of note. Near the church legend locates a royal hunting lodge, frequently used in the reign of King John, who was very fond of Rockingham Forest, and spent much of his time at the neighbouring Castle of Rockingham. Nothing is now left of this ancient lodge, but traces of the care bestowed on the fish stream are still discernible. It is on record that King John lost 4s. 10d. on one occasion, and 4s. 11d. on another, when gambling with the Earl of Salisbury at King's Cliffe.

Near Cliffe is the village of Apethorpe, with the charming old mansion of the Mildmays, one of the best preserved and most interesting of Northamptonshire houses, vying in beauty with Drayton, Rushton, or Rockingham. It is built round two courts, of which one is some century older than the other, and dates from about the beginning of the sixteenth century, or a little earlier. The house was then already of considerable size, and possessed a fine hall with bay-window and daïs, and a gateway and tower. In the reign of Edward VI. Sir Walter Mildmay became possessed of Apethorpe, and entered into possession of the already built house. Early in the seventeenth century his son, Sir Antony, added what is now the principal quadrangle in front of the old house, some of the timber being supplied for the purpose by James I., who stayed at Apethorpe on his way to London from Scotland in 1603. The seventeenth-century work presents the greatest interest, as it has undergone very little alteration. The late Earl of Westmorland (who inherited direct from the Mildmays) cased the west side of the front quad with a Classic façade of much correctness but no interest; and the present earl has converted what was an arcade on the south side into a commodious hall,—a decided improvement in the comfort of the house. But apart from these, no changes of any magnitude have taken place, and the Jacobean ceilings (figs. 3 and 4) and chimney-

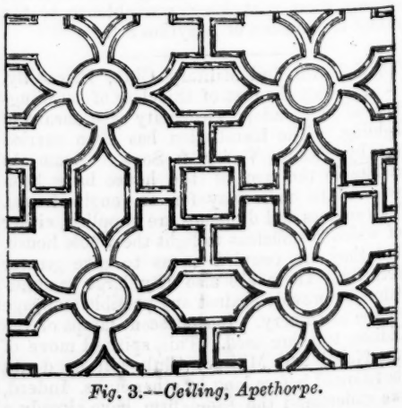


Fig. 3.—*Ceiling, Apethorpe.*

pieces retain all their original beauty, and are very excellent examples of their style. The earlier quad, on the other hand, has gradually been deprived of most of its distinctive details, though it still possesses much that is picturesque in grouping. The hall of the early building, with its porch, passage, and bay, form a beautiful group in connexion with the Jacobean gables.

* Illustrated in the *Builder* of Oct. 18, 1884.

The Hall, once the chief apartment of the family, is now devoted to the servants, and the dais has been removed for the better enjoyment of the dance. Partly in consequence of this shifting of the centres of life, and partly in consequence of the reckless planning of Jacobean architects, the house is less adapted to modern

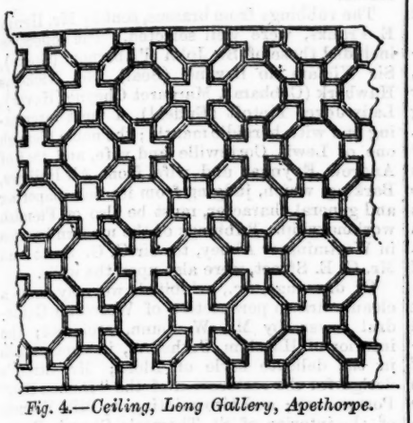


Fig. 4.—Ceiling, Long Gallery, Apethorpe.

habits than the inmates could desire. Nevertheless, no destruction is contemplated, and it is satisfactory to think that Apethorpe will remain unchanged and undiminished in beauty, amid its lawns and its yews, to give as much pleasure to the next generation as it does to the present.

The church at Apethorpe is not of very great interest, but we give sketches of the screen, one of the vanes, and the cresting of an an iron gate (figs. 5, 6, and 7). The most

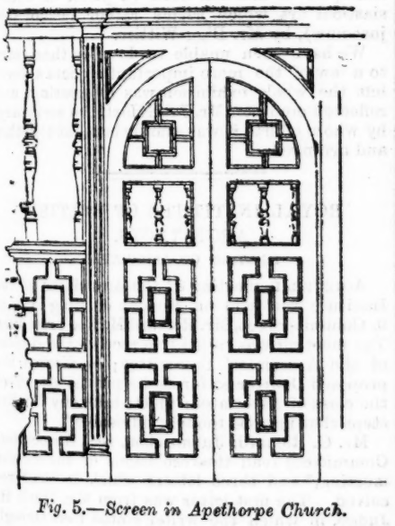


Fig. 5.—Screen in Apethorpe Church.

noteworthy feature being a very fine monument to Sir Anthony Mildmay and his wife Lady Grace, who, "having lived here

Fig. 6.

worthely dyed comfortably" in 1617 and 1620 respectively. Their sole daughter and heiress, Mary, married Sir Francis Fane, who erected this monument in 1621. Sir Francis was subsequently advanced to the dignity of Baron Burghersh and Earl of Westmoreland, and in his family Apethorpe has remained ever

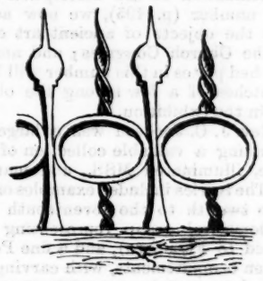


Fig. 7.—Iron Cresting to Gates, South Porch, Apethorpe Church.

since. The title Burghersh, borne by the eldest son, is said to be a corruption of Burwash, a village in Sussex, near the borders of Kent, from which country the Fanes came.

With Apethorpe the visit to the neighbourhood of Stamford came to a conclusion, and the members of the club went their several ways all the better for their short contact with the fields, the woods, and the old buildings of Northamptonshire.

A NOTE ON SEPULCHRAL SYMBOLISM.

The author of "Gothic Contrasts" reproaches us for dispelling the cross from our places of worship and burial, and substituting emblems of a heathen nature, and the charge is only too true; while another authority laments "the marble pyramids and mural tablets, and tall, white, monotonous slabs of our churches and churchyards" as the result of our rejection of the great Christian type of redemption.

We turn to the more ancient of our monuments to learn from them some of the lessons they have to teach in their silent but most eloquent language.

"The boast of heraldry" enters largely the adornments of Mediæval tombs, and tells the history of their dumb occupants in its own impressive tongue of quaint designs and fading colours, recording alliances and descents in this shorthand of history.

We learn from Boutell that the Templars are unchronicled amongst the dead, not one of this order being met with even in their own London church, and he gives two probable reasons for this: either that some now-forgotten rule forbade any such record of these military priests, or else that the evil repute they ultimately fell into caused the destruction of every memorial appertaining to them. Cross-legged effigies are often mistaken for these guardians of the Holy Sepulchre, but our author dispels the fond illusion, much as we may regret it. He adds that as so many admirable specimens of knightly figures are to be met with of this period, the absence of Templar traces is the more remarkable. We meet with some interesting particulars of sepulchral symbolism in a work by Ellen J. Millington, who tells us that at first kings and nobles alone were accorded heraldic surroundings to their tombs, and that knights or simple gentlemen were only entitled to such distinctions when they had lost their lives in battle. Those who had so died on the victorious side had naked swords laid by their effigies on the right hand, with the point turned upwards, and on the left a shield, with their arms. Such as died in prison had neither spurs, helmet, nor sword; while those who fell on the field fighting on the vanquished side were represented in armour without a surcoat, with swords sheathed, vizors open, hands joined on the breast, and a dead lion at the feet.

The son of the commander of a fortress, who died during the siege of it, was always represented in complete armour (no matter how young he might be) with his head resting on the helmet.

Some warriors at the last assumed the monastic habit to atone for their sins, and such are presented to us partly clad in armour and partly in the attire of the monk.

King John's effigy at Worcester Cathedral lies between two smaller ones of St. Wulstan and St. Oswald, and perhaps none of our monarchs had more need of such holy supporters. The king's figure is the oldest regal effigy in England.

Statuettes (known as weepers) are often met with carrying shields of arms, and very appropriate they appear around a monument.

Badges enter largely into the adornment of sepulchral architecture, being often repeated in profusion, and yet without wearying the eye or appearing in any way obtrusive.

We recognise a bishop by his mitre and pastoral staff, and some writers hold that he may be distinguished from an abbot by his crook being turned *outwards* to show his more extended jurisdiction, but this rule has not been always observed, and it is not a safe one to follow. We may just add that the older the figure is the smaller will be the mitre, and the more beautiful, in our opinion, the tall convexed form belonging to a later period and not a change for the better.

Inverted torches in Christian burial-places are strongly condemned for their heathen associations, but in some of our modern cemeteries the chapel is a heavy example of Pagan architecture, and we cannot wonder at the surrounding tombs showing a tendency in the same direction.

We have little sympathy with some of the obtrusive memorials of the seventeenth century overloaded with Italian scroll-work and reaching to the roof of the church, the very snobbery of the grave.

When angels are sculptured the work should be of the very best. We have met with these would-be celestial creatures, cumbersome as weighty, hovering over their dead charges with inverted wings like broody hens, a mockery, a snare, and a delusion, a warning to avoid such scarecrows in the future.

THE "MONT DORE" OF BOURNEMOUTH.

If you take up one of those early prints of the Ordnance Survey of England which were issued from the Tower in the first quarter of the present century, and look thereon for that town of Bournemouth the name of which is so familiar to our ears, you may look long, and you will look in vain. The Bourne, indeed, is indicated by a thin wavy line, broadening seaward, till it is merged in the graceful curve which marks the coast line from Studland Bay to the bold headland with the Saxon-sounding name of Hengistbury. For miles behind the sea margin all is open heath or primæval forest, and there is no sign of human habitation from Poole, on the west, to the more ancient Christchurch, on the east. The little Bourne which Hengist saw, or might have seen, still courses swiftly down the valley, to mingle its silvery waters with the open sea; but instead of threading its devious way through a tangled dell of fern and bramble, it flashes by level stretches of smooth-shaven lawn, and reflects the glowing colours of a thousand flowers. We have arched over and built upon our Bournes, Old Bourne, Tye Bourne, and the rest, converting them into noisome sewers, to Mr. Ruskin's unmeasured indignation and all wise men's regret. But with a wiser conservatism the Hampshire men have preserved their bright little river from pollution, and its pine-sheltered valley from the inroads of the speculating builder, and have by the aid of art so assisted nature that the unfrequented wilderness has become little short of an earthly paradise. In half a century the population of Bournemouth has grown from 0 to 30,000, and continues to grow at compound interest. For this remarkable rate of increase there is, as may be supposed, a very sufficient reason. Owing to a variety of causes, its climate is unique, and its value as a health resort,—unsuspected by our forefathers,—is known all over Europe. The balsamic emanations from the evergreen pine, which is indigenous here, have proved their efficacy in those special diseases to which we English are particularly subject. The rapid spread of its reputation has been accompanied by as rapid an extension of the town for the accommodation of visitors who flock thither from the four corners of the world. Shops, banks, hotels, lodging-houses, sumptuous villas, noble churches, the last and noblest being a particularly fine example of Mr. Pearson's skill, have arisen and are arising on every hand. And now a palatial building has been added to their number, combining with the attributes of a modern hotel of the first magnitude a system of baths which is said to be unequalled in Europe for variety and completeness. The Mont Dore of Bournemouth is differentiated from hydropathic institutions by the use of a

particular water, which is in part a natural spring, and in part an artificial compound. Since the time of the Roman occupation of Gaul, the therapeutic virtues of certain hot springs at Mont Dore in the Auvergne have been known and well attested. The country there is mountainous and extremely beautiful, and the air is perfumed with the scent of fir woods.

The accident of the reputation of Bournemouth being connected with its pine woods suggested to Dr. Horace Dobell the idea of converting Bournemouth into an English Mont Dore. He thought that the mild and equable temperature of the place, with its coast line sheltered from the winds, and its soft sea air "perfumed with the scent of pines," might even possess advantages which were not to be found at the Auvergne resort. By exact analysis he ascertained the constitution of the Auvergne water, and saw no reason why it should not be artificially reproduced. The outcome of his idea may be seen in the Mont Dore of Bournemouth, which was publicly opened on Saturday last, in the presence of the directors, their chairman (Dr. Meadows), and a large number of medical, scientific, and other friends interested in the undertaking. Dr. Emond, who was the physician in charge of the establishment at the Auvergne, and is now in charge of that at Bournemouth, explained, to an attentive audience, the *rationale* of the "Mont Dore cure," and demonstrated the action of the many beautiful contrivances connected with its application. The water used contains, with the ordinary salts, slight traces of arsenic. For drinking, in carefully prescribed doses, the genuine water is brought from France; but for outward application an artificial water is chemically compounded. For affections of the eye, ear, throat, &c., the water is applied in a "pulverised," or finely-divided, state, at any required temperature, and with any required degree of force, by the aid of a series of beautiful mechanical appliances made by M. Mathieu, of Paris. The Russian, Turkish, electric, and other baths, have been arranged by Mr. John Smeaton; and the salt-water and other pumping machinery by Messrs. Merryweather. The elaborate system of gas-lighting throughout has been entrusted to Mr. D. Hulett, who has, it will be remembered, amongst other modern works on a large scale, recently carried out the gas-fitting to the Hôtel Métropole.

The building, which stands upon four acres of high ground, a short distance from the sea, has accommodation for 120 residents. The dining-room, drawing-room, billiard, reading, smoking, and other rooms, are on a suitable scale, and have been planned in such a way as to bring the comforts of home into what is, in a measure, a great public institution. As the King of Sweden,—whose queen attributes her restored health to a stay in Bournemouth,—laid the foundation-stone, and has since manifested a strong interest in the building and its objects, a suite of apartments for the royal use has been provided in one wing of the building. And it is in contemplation to considerably extend the structure so soon as the "cure" becomes better known to those who are suffering from the diseases which it is especially calculated to reach.

The architect, Mr. Alfred Bedborough, who was warmly congratulated on the success of his work, is responsible for the whole of the arrangements, and the building appears to be extremely complete in its practical treatment, though we regret that we cannot feel moved to enthusiasm concerning its architectural design. In carrying out the engineering portion of the works,—which are of an unusually complicated nature,—the architect was assisted by Mr. W. W. Phipson, whose large experience was of the utmost service. The general contract was taken by Mr. Howells, of Bristol, who has succeeded in raising an enormous building upon a somewhat difficult site with much credit to himself.

Bisham Abbey Excursion.—In our notice of the Saturday visit of the Architectural Association last week, we omitted to mention that for the sketch of the old Deanery at Great Marlow, as well as for the photograph from which the sketch of Bisham Abbey was made, we were indebted to the kindness of Mr. A. L. Forrest, the member of the Association who has acted as hon. secretary for this series of Saturday visits.

NOTES AT THE CHURCH CONGRESS ART-EXHIBITION AT PORTSMOUTH.

In continuation of the description given in our last number (p. 495), we now add some notes on the objects of ancient art exhibited during the Church Congress; and among the lithographed plates in this number will be found some sketches of a few among the objects of interest in the exhibition.

The Rev. J. C. Jackson was a large contributor, lending a valuable collection of ivories, old plate, illuminated MSS., and many other items. The ivories included examples of carving from the twelfth to the seventeenth century. An emblematical group representing Charity (attributed to Fiamingo), and a fine Polyptych in eighteen compartments, with carvings of the Nativity, &c., may be especially mentioned; also, among later specimens, a small medallion of Hercules and the Centaur, and an English covered cup of good Classic design, both of seventeenth-century date.

We noted as curiosities two engraved ivory tablets, representing respectively a pastoral scene and a naval engagement, and a very remarkable ivory folding dial with tables of latitude and longitude. Among the specimens of book-binding in the Jackson Collection were a vellum-bound "Book of Emblems" (see illustration); "La Concordance" of the Evangelists, 1558, in Maioli binding; a Roman missal of 1776, with red velvet sides, and bold rich *repoussé* silver borders, and arms in centre; and a silver-hinged book-cover of 1702, richly chased with tulip ornament. A fine enamel plaque, with Virgin and Child, in high gilt relief (? twelfth century), and an elaborate stamped portrait of Melancthon on pigskin may also be named among the book-covers. A "cuir-bouilli" box for Communion-plate from Chesterton-Parva Church, covered with whorls and other conventional ornament, and assigned to the fifteenth century, resembled in general form the finer one at Cawston in Norfolk. Among miscellaneous items were the silver cup belonging to Philip, father of Matthew Henry (see illustration), and a fanciful sixteenth-century rosary of silver-gilt filigree and coral. From a "Biblia Sacra" (Luther's version, 1560), also lent by Mr. Jackson, was obtained the sketch of the shield bearing a lion rampant, given by us with others this week.

The Rev. Canon Millard sent a collection of bronzes, principally of the sixteenth-century date.

The Rev. Campbell-Lock exhibited fac-simile copies of the interesting but little-known mural paintings in the chancel of Idsworth Church, Hants. They represented St. Hubert, accompanied by hounds and attendants, restoring a Lycanthrope (half man and half wolf, see illustration) to the possession of reason; and the Decollation of St. John. It is said that the only other Mediæval representation of St. Hubert in England is that on the tomb of Sir Oliver de Ingham, in Ingham Church, Norfolk.

The parish registers from Charlton and Idsworth were also shown. The admirable way in which they have been re-bound sets a good example to the clergy having the custody of such valuable records.

Mr. Montague Knight contributed a MS. "Missal" and a MS. "Horæ," of uncertain date, but both very charmingly illuminated.

A jewelled, copper-gilt crucifix, belonging to Canon Portal, attracted notice. The stem was supported by two angels, and rested on a seated figure of the Virgin, the four Evangelists being represented at the angles of the base.

Among the pieces of Communion plate shown were large chalices 10 in. high (1708), and large silver-gilt alms-dish (1728) from St. Mary's, Southampton; chalices and patens from Chalton (1568) and East Clandon (1570) (see illustration); and a chalice (? *temp.* Mary) from Sopley.

The Rev. C. Walker exhibited some charming examples of old embroidery and needlework, notably, a very beautiful humeral veil of Venetian brocade; an old Italian chasuble with white lace orphreys on a rich silk ground; and a jewelled Italian stole of gold brocade. The old silk chasuble lent by Miss Lucas (see illustration) also possessed red colour and design. Amongst the old needlework appeared a modern "allegorical set of ecclesiastical art needlework," which can only have been admitted as showing what to avoid both in colour and design.

Mr. W. H. Saunders gave a little local colour to the show, in his small collection of old prints, books, and seals. The seals included impressions of the ancient seal of Portsmouth (on the obverse of which is a ship with men furling the sails); that of the "Domus Dei"; and the very rich and well-known one of Southwick Priory, Hants.

The rubbings from brasses, sent by Mr. Henry E. Franks, were well selected. The collection included those of Sir John d'Abernon (Stoke), Sir William de Bryene (Seal), Sir Nicholas Hawberk (Cobham), Margaret Cheyne (Hever), Lady Joyce Tiptoft (Enfield), a most interesting one with heraldic mantle; the noble Flemish one of Lewis Cortewille and wife, and that of Andrew Evyngar and wife, from All Hallows, Barking, which, judging from its rich diapering and general character, must be also of Flemish workmanship. Rubbings of the modern brasses in Westminster Abbey, to Sir G. G. Scott and Mr. G. E. Street, were also upon the walls.

Of drawings, &c., exhibited, we may name a cleanly-drawn perspective of Worcester Cathedral tower, by Mr. W. Lunn, architect; the interior of Haarlem Cathedral, in sepia, much in the delicate style of Blore; Mr. Street's design for the restoration of the "Domus Dei," Portsmouth; and two paintings by Miss Francis of the interior of St. Thomas's Church, Portsmouth, which may hereafter prove valuable as records of its quaint arrangements.

A copy-book by Gething (1615) showed some wonderful penmanship (almost an obsolete art), with most elaborate initials, &c., drawn in "free-hand."

We should have mentioned that the very curious Coptic crosier shown in our illustration was in the Jackson collection; and the small cross sketched was exhibited, with other examples of Russian work (a phase of ecclesiastical art which seems rather fashionable just now), by Mr. Bigg-Wittier.

We have been unable to do more than refer to a few of the more important objects shown, but the whole exhibition was interesting, and reflected credit on Mr. John Hart, the secretary, by whose efforts it was mainly brought together and arranged.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

MEETING OF ASSOCIATES.

A general meeting of the Associates of the Institute was held on Monday evening last, at 9, Conduit-street, Mr. Richard M. Roe presiding. The meeting was called "to receive the Report of the Associates' Committee; to discuss the proposed Charter so far as its provisions affect the class of Associates; and to take any further steps that may be thought advisable."

Mr. G. Richards Julian (hon. sec., Associates' Committee) read the resolutions of the former meeting,* and three letters which he had received. The first letter was from Mr. Mark H. Judge, in which the writer stated that though in most respects the proposed new Charter was admirable, an effort should be made to amend the 24th clause so that the Associates should have some voice in the making of the by-laws.† He did not suggest that they should have an equal voice with the Fellows and he therefore submitted the following amendment:—"That, in the opinion of the Associates of the Royal Institute of British Architects, it is most desirable that the new Charter should give them a voice in the making of by-laws, and it is, therefore, resolved,—"That the Council be asked (1) to amend the 23rd clause of the proposed new Charter by adding the words,—'Every Fellow shall be entitled to two votes in respect to the making altering, revising, suspending, or rescinding of any by-law'; (2) to amend the 24th clause by leaving out all the words after the words 'Election of Fellows,' and thus provide for the voting power in respect of by-laws being in proportion to the subscription of members." The second communication was from Mr. Elgood, of Manchester, who considered that the terms of Mr. Judge's motion were more definite than the

* For a full report of this meeting, see *Builder*, May 10, 1884, pp. 679-681.

† The 24th clause of the proposed Charter runs as follows:—"At every General Meeting every Associate and every Honorary Associate shall be entitled to be present to vote and to take part in the discussion of business provided always that no Associate nor Honorary Associate shall be entitled to vote in the Election of Fellows or in respect of the making altering revising suspending or rescinding of any By-law."

amendment to Clause 24 proposed in the report. The Associates were now assured of having the whole matter before them, and he hoped they would obtain for the future a reasonable voice in the affairs of the Institute. Mr. Brodie also wrote that "though he agreed with the suggestions in the Committee's report, he did not think they went far enough. The election of the Council should be by voting papers, as in the case of the Architectural Association. As to Clause 24, he did not see why Hon. and ordinary Associates should be put on the same footing."

The Chairman pointed out that the movement, which was originally thought of by a few of the members, received afterwards the general and enthusiastic support of a largely-attended meeting. The Committee which was appointed met for the first time on the 29th of May, 1884, and had since held fifteen meetings. The memorial was the first business they had to attend to, and this was presented at the first meeting of the Institute last session. Since that time the Committee had used every effort to obtain a reply to the prayer of the memorial. A deputation from the Committee attended, by invitation, a meeting of the Charter Committee of the Institute, who indicated the lines on which the new Charter was proposed to be drawn. Some dissatisfaction had arisen on account of the delay in calling the Associates together, but until the draft Charter was in the hands of the members there was really nothing definite to submit. It was not his intention to enter into the details of the advantages or disadvantages of the proposed new Charter, but from a personal point of view he was thoroughly satisfied with the results of their labours, provided they obtained a recognition of their interests in the form recommended by the committee. The Associates had, therefore, every reason to congratulate themselves on the success of the movement, which from a small beginning had obtained the almost general support of the younger members of the profession. The new Charter had not yet been submitted to the Institute, except to individual members, and it was by no means certain that the Fellows would not want to make sweeping alterations in the proposals, which might considerably curtail the privileges now proposed to be conferred. It would, therefore, be all the more necessary to show a bold and determined front so as to leave no doubt on the minds of the Fellows that the same unanimity which had been shown up to the present should still continue to prevail. He must now refer to the losses sustained by the committee in the death of Mr. E. E. Hollis, and the departure of Mr. J. P. Power for New Zealand. Mr. Clarkson, though no longer a member of the Committee, was now in a position to aid them as a Fellow of the Institute. The first business, then, of the meeting was to consider the Committee's report, and it would also be necessary to decide on what should be done for the future, and to appoint a committee to represent the Associates until the matter was finally settled.

Mr. G. Richards Julian moved the adoption of the report. It was now nearly eighteen months since the first meeting was held, and although the progress since then had not been very rapid, they might fairly congratulate themselves on what had been accomplished. The Council of the Institute had put into their hands the draft of the proposed new Charter, and, although he was not at all inclined to underrate the exertions of reformers both on the Council and amongst the Fellows, he might fairly say that had it not been for the exertions of the small committee who got up the meeting during the Conference week, and for the labours of the larger committee since then, they would not now have been in possession of the draft Charter. The Committee's report showed that they did not consider the proposed Charter altogether satisfactory. But as he had heard it confidently stated that it gave them nothing which the old one did not give, that it took away with one hand what it conferred with the other, one gentleman saying that it left them worse off than before, he would briefly enumerate the reforms contained in it. First, the Associates were to have the right of voting in the election of all Associates. Secondly, Associates were to vote at all ordinary meetings, except on the question of by-laws. Thirdly, Associates were to vote in the election of the Council and officers. Fourthly, the property of the Institute was to be vested in all members instead of in Fellows only. Fifthly, Associates might be represented on the Council, and, as he read the Charter, would be eligible for election if a by-law did not prevent it. They were also to be eligible for the office of paid Secretary, as well as for the Auditorship. It would be possible also to obtain for the country Associates power to vote although not present. Surely this was a great deal more than the most sanguine of them had expected two years ago to see proposed by the Council of the Institute. The first step the Committee had taken was to elect seven additional members, and he believed the selection made had given general satisfaction, the Architectural Association being well represented. He need not say anything about the memorial or its presentation, but, as time went on, some uneasiness arose as to its fate, and suggestions were made that it had gone into the Council's waste-paper basket. He was, therefore, requested to bring forward the subject at the Business Meeting of the Institute, and received there what he considered a satisfactory reply. Then followed some correspondence. They were desirous of being in closer touch with the Charter Committee; and, finally, a deputation waited upon that body, when the discussion turned chiefly on the Charter and by-laws of the Surveyors' Institution. The deputation did not feel competent to accept anything on that occasion, but returned to report to the committee. In consequence, the Chairman was authorised to send a letter, stating "that the Associates' Committee will be prepared to recommend to the general body of Associates, for acceptance as a basis of settlement, the Charter and By-laws of the Surveyors' Institution, so far as regards the voting power and privileges enjoyed by the class of professional Associates, conditionally upon provision being made for giving country Associates facilities for voting by means of voting papers transmissible by post." The Council had not accepted that basis; they objected to the Associates voting in the election of Fellows, and therefore that matter was at an end. Then came the Charter, and in considering it, and especially in connexion with clause 24, they had endeavoured to do so, not from the point of view of class interests, but to obtain such a Charter as should be permanently satisfactory to all. The object was not to gain for the Associates something at the expense of other people or of the Institute. Therefore, the claim of the Associates to vote for the election of Fellows, as it was considered likely to cause a great deal of feeling, might well be surrendered, conditionally on power being given to vote on those by-laws which directly affected the Associates. The Committee had, therefore, made a recommendation to that effect. The elasticity which the Council claimed was a desirable thing, as it was not to be desired that if, fifty years hence, large alterations in the constitution of the Institute should be necessary, they should be obliged again to apply for a new Charter. As to the question of the by-laws, in starting a new society it might be allowable for the promoters to frame the first by-laws; but in an old and established society like the Institute, when it had to be re-modelled, it seemed absurd that such a large and influential class as the Associates were, should be without a voice. The Committee's proposal was to give the Associates the right to vote in all by-laws directly affecting them, leaving the Fellows alone to vote on all other by-laws. Mr. Judge had proposed his amendment on this point,—an amendment which seemed to savour of the old political fallacy known as "having a stake in the country." Who had the greater stake in the Institute,—the Associate of 25 or 30, whose life was a prospect, and to whom the prosperity and well-being of his profession were all-important; or the Fellow of 50 or 60, whose interest in it was principally retrospective? The report further recommended "that the granting to all country professional members of the practical power of voting is essential to the well-being of the Institute, and would gladly see the right to vote by voting papers,—at least in the election of the Council and Officers,—made an essential part of the Charter, so that no by-law could possibly take it away." This was a very important matter, and if something of the sort was not done the reform of the Institute would fail to reach the hearts of the country members. The Committee had had some correspondence with the Manchester Society of Architects, who had for years been stirring up the Institute on the subject, and it was agreed that no settlement would be considered satisfactory which did not provide for this. The Committee thoroughly appreciated the amount of labour which had been gone through by the Charter Committee of the Council, in preparing the various schemes, and in arriving at the result which was now before the meeting. In conclusion, he hoped that in all steps to be taken before the new Charter became an accomplished fact, the subject would be treated by those who discussed it in a broad and liberal manner. It should be distinctly understood that the Associates, in asking for these reforms, were not doing so with any desire to gain advantages for themselves at the cost of others, but simply because they were satisfied that if the Institute was to hold the place to which it was entitled, it must advance with the times. There was no such thing in the life of an organism or institution as standing still. The presence of life implied the necessity for activity, and the moment activity ceased to take the form of evolution or progress, degeneration commenced. The next few months must decide whether the Institute, casting off the swaddling-bands of its infancy, was to obtain the healthful freedom necessary for vigorous growth and development, or by an attempt to retain unnecessary restriction, was to court premature decay and unlamented death.

Mr. W. Hilton Nash said he rose with some diffidence to second the motion for the adoption of the report, because up to the present he had not taken much part in the movement, although his feelings had always been with the Committee, who were entitled to the thanks of the Associates for the labours they had undertaken. If they obtained a radical change in the constitution of the Institute, it would be greatly to its advantage, and by that means they would largely increase the number of its members. A great many men who would then feel that they had some voice in the management, would readily join it. He happened the other day to come across a letter of Sir Gilbert Scott's, written in the year 1834, on the subject of the formation of an Institute of Architects. In that letter, Sir Gilbert (then Mr.) Scott said he felt rather doubtful whether he had better join the association, as he heard it was to be composed chiefly of the older men, and the young men would hardly have any voice in its management. He (Mr. Nash) believed that was just the case with a great many architects now, and, no doubt, the ranks of the Institute would be greatly swelled if the younger members could feel they had some voice in its guidance. Although he did not now wish to make any amendment upon the amendment of Mr. Judge, he might have been inclined to strike out all the 24th clause after the words "discussion of business, &c." The Associates were really the working part of the Institute. (A Voice: "Its brains!") If they were not the brains, they were, at any rate, the life and soul of the Institute, and they were, therefore, entitled almost, if not entirely, to an equal voice with the Fellows. It might be possible to give the Fellows two votes and the Associates one.

Mr. C. R. Pink (President of the Architectural Association), supported the adoption of the report, and did so with the more freedom in consequence of the little hand he had had in its preparation. The report was one which might be termed just, moderate, and, at the same time, likely to prove effectual. By some oversight in the draft Charter the right of the Associates to vote upon the by-laws specially affecting their status appeared to have been omitted. This was a point of great importance,—indeed, it was of most vital importance to the Associates, for without having that right their status as members, the terms of their admission, and the amount of their subscription might be altered, while they would have no voice whatever in these important matters. Therefore, this subject had been put very properly in the foremost place of the report. Another point to which he would like to call attention was the suggestion made to the Council that the voting of the country members should be by voting papers, and that this should be placed in the Charter as an essential part of the government of the Institute. At the present time the country members were, to all intents and purposes, disfranchised, for it involved the expenditure of a great deal of time and money for a country member to come up and record his vote. He was glad, therefore, to see that these great reforms were included within the four corners of the Committee's report. For a long time he had felt that on these

depended the future success of the Institute. The great drawback in the past had been the want of touch between the executive and the general body of members, and those two reforms would effect a cure. He hoped the Associates would decide unanimously upon the course to be pursued, and that they would dwell upon those points which were absolutely essential to their well-being, but at the same time not be led away by anything like factious opposition, or into the province of mere personal fads and crotchets. It was their duty to back up the Council to the utmost of their power on the main issue, as they might want all this support even against some of the Fellows. It would be necessary to afford the support if they wished to see these reforms now carried through, —reforms which would place the Institute on a larger, wider, and more sympathetic basis, and on which depended, to a great extent, the future of the profession in this country.

Mr. Mark H. Judge then proposed the amendment of which he had given notice. He had sent this amendment to the Committee before the report was drafted, and, had it included the proposal that the Associates should vote on all by-laws with the Fellows, he would not have suggested this amendment. But it was hardly right that there should be one by-law for the Fellows and another for the Associates, and he would, therefore, prefer as an Associate, that his voting power should be as 1 to 2 rather than be treated in a different way to those of the Fellows. They had to consider whether this would affect Associates or not, and in many cases it would be impossible to have any by-law which did not affect the Associates. Therefore he had ventured to put forward this modified suggestion, which was a proposal that the Fellows would be likely to accept. There was much to be said in favour of the Fellows having a greater voice than the Associates, for experience and age ought to carry some weight. He, therefore, did not agree with the Charter of the Surveyors' Institute, which gave its Associates the right of voting for Fellows. The class of Fellows ought to vote for the election of Fellows, and the votes which decided whether a member should be raised to a higher class should be the votes of the higher class, and not of the lower.

No seconder being found for Mr. Judge's amendment, it fell to the ground.

Mr. Hugh Stannus considered that the matter of the Associates having a vote would be met by taking out the words of the twenty-fourth clause after the words "in the election of Fellows." He believed the Council were disposed to meet them in a handsome and liberal manner. He had great faith indeed in the Council, and he was certain that that body had great faith in the Associates. He did not like the idea of the double arrangement of voting, which would entail a little mental arithmetic now and again.

Mr. Middleton seconded Mr. Stannus's amendment.

Mr. Hardcastle could not support the amendment. He contended that they ought to look at the question from the point of view of the Fellows, to whom they went, and whose votes they asked. When it came to a question of voting they had no power to alter the Charter, and had, therefore, to depend on the good-will of the Fellows, which they were not likely to get by making excessive demands. What would be the first question which a Fellow would ask on seeing these proposals? He would say: "I am willing the Associates should have some power, but, if they are to have equal votes with me, what is the good of being a Fellow and paying four guineas?" Fellows would generally carry influence by virtue of their position and professional standing, but if the Associates led them to suppose that they were aiming for absolute equality, they would look coldly upon the recommendations. He saw no reason why the senior members of the Institute should not have exclusive power in some respects. He was, therefore, willing to leave in their hands the election of Fellows and also the making of by-laws which did not specially touch the Associates. There might be a number of by-laws relative to details of administration of the Institute which could be left in the hands of the Fellows without any injury to the Associates. It should, therefore, be their policy to show the Fellows that the Associates were not grasping for everything, but were willing to leave other matters to them, besides the mere election of their own body as a mark of their superior wisdom and seniority in the Institute. If they got what was indicated by the quotations from the draft Charter, the Associates would have obtained as much as they wished.

Mr. H. McLachlan suggested the propriety of Mr. Stannus withdrawing his amendment. The Fellows would never permit themselves to be swamped by the vote of the Associates. Mr. Judge had altogether disclaimed the idea of the Associates voting in the election of Fellows, and it would, therefore, be unreasonable to claim the power of voting in the making of by-laws which simply affected that body. He advised the meeting to keep closely to the subject matter of the Report and the position of the Associates.

After some remarks from Mr. Mundy and Mr. Langston,

Mr. William Woodward said he believed they would obtain all that the speakers had desired by adopting the Committee's report. There must of necessity be by-laws which would affect the Fellows only, as in the event of that body determining to increase their own subscription.

Mr. C. Cazalet considered that they would make the matter much less distasteful to the Fellows, and would practically gain all that was required, by confining themselves to the terms of the report.

Mr. J. Osborne Smith remarked that the Associates should simply demand to have a voice in the making of all by-laws which concerned themselves.

Mr. H. Atwood Reeves could foresee a meeting at which subjects might be brought up for discussion, and when it would be impossible to decide whether they affected the Fellows or the Associates only. Indeed, he could not conceive any by-law affecting the Fellows which would not also affect the Associates. Had not the latter moved in this matter there would have been no draft Charter emanating from the Fellows. The subject had been pressed upon the Fellows only by the number and power of the Associates, and it would be better for them to resign their membership than to accept a modified position which did not give them what they demanded.

Mr. H. D. Appleton supported the original resolution.

The Chairman thought this was an instance of educating a party beyond its expectations. He would, therefore, appeal to Mr. Stannus to withdraw his amendment.

Mr. Stannus having preferred that his amendment should be put to the vote, it was lost, and the original motion for the adoption of the report was carried unanimously and with a cry of "All!"

The Committee were next re-elected, with the addition of the names of Messrs. W. Hilton Nash, H. A. Wooster Reeves, and T. Edward Pryce.

Mr. Stannus asked for information as to the expenses of the Committee.

Mr. Julian replied that the expenses amounted to about 23*l.*, part of which had been met by a call on the members of the Committee.

It was then agreed that the Hon. Secretary should bring the matter of the expenses before the Associates generally, so that all might contribute.

Votes of thanks to the Council of the Institute for the use of the room, and to the Chairman for presiding, closed the proceedings.

COMPETITIONS.

New Church, Dinas, Glamorgan.—In the recent limited competition for this church, the design of Messrs. Halliday & Anderson, of Cardiff, was selected.

Board Schools, Basingstoke.—At a meeting of the Basingstoke School Board on the 6th inst., the competition for designs for new school buildings was referred to, and, in answer to letters from the architects who had been invited to compete for the new school buildings, the Clerk was instructed to inform each competitor that the time for sending in the designs would be extended to the 16th of November; that one member of the Board being an architect, it was not their intention to engage professional assistance in selecting the design to be adopted; that no further conditions would be imposed, except that any perspective drawings submitted must be etched or outlined only, and not coloured; and that the Board had decided not to disclose the names of the competitors. Mr. Wallis submitted letters from Messrs. Wyatt & Spier, and Messrs. Fox & Son, asking to be allowed to compete with designs. The Clerk was instructed to reply that in the event of any one of those at present invited to compete declining, Messrs. Wyatt & Spier be asked to take his place, and that if two declined, Messrs. Fox & Son also be asked to compete.

Illustrations.

No. 6, HYDE PARK MANSIONS, EDGWARE-ROAD.

THIS mansion, erected by Messrs. Wheeler & Warren, from the designs of Messrs. C. Eales & Son, architects, forms one of a series, arranged in suites of residential flats, and is finished with all the latest improvements for self-contained residences.

There are fireproof floors throughout, concrete staircase, and hydraulic elevator working in the well-hole of the same. The exterior is finished with red facing bricks and Corsehill stone dressings, the roofs being covered with Broseley tiles.

DESIGN FOR AN EXTERIOR TO THE CHURCH OF ST. STEPHEN, WALBROOK, LONDON.

THE original drawing from which this illustration is reproduced is the work of Alexander Poole Moore, an architect who flourished in the last century. It is apparently the effort of an admirer of St. Stephen's to furnish the church with an imaginary suitable exterior, having cleared it of encroaching buildings. On the back appears the following inscription:—

"This is the design and drawing by Mr. Alexander Poole Moore (*circa* 1800) for an exterior adapted to the interior of St. Stephen's, Walbrook, purchased by James Savage at the sale of Poynder's effects, 1850, and presented to H. Shouts by Jas. Savage, architect."

It measures 27 in. by 19 in., and is beautifully finished in water-colour, in the old-fashioned somewhat colourless manner. It shows a portion of the west side of the Mansion House and houses apparently detached on the Cannon-street side of the church. The dome is shown without a lantern, and there is an entrance at the back of the Mansion House, which does not appear to have existed in the original structure, beside the one in Walbrook.

The drawing has been kindly lent to us for publication from the private collection of a gentleman residing in London, who has collected a number of sketches and studies of artistic interest, about which we hope he may let us hear more in future.

SKETCHES NEAR STAMFORD.

FOR particulars about the subjects sketched in this plate see the article "Round Stamford," in another column.

WYNDYATE, SCARBOROUGH.

OUR illustration is one of several designs prepared by the architects (Messrs. W. Sugden & Son) for Mr. Brough's residence at Scalby Bridge. The buildings, as now approaching completion, include also farm and lodge, &c., and differ considerably from the structure shown in the water-colour we here reproduce. Upon a future occasion we may illustrate them as executed.

SCULPTURE—"DAVID PLAYING BEFORE SAUL."

THIS is another of the sculpture exhibits in this year's Academy, of which illustrations were promised by the artists, but were not available till after the close of the Academy. The work, which represents "David Playing before Saul," is a bas-relief of above quarter size, and hung in the lecture-room of the Academy on the same wall with the bas-relief of Mr. Roche of "David Entering Saul's Tent," which we illustrated a few weeks ago, the two forming, to some extent, pendants to each,—as far as regards subject, at all events. The sculptor is Miss Ellen M. Rope.

SKETCHES AT THE ECCLESIASTICAL ART-EXHIBITION OF THE CHURCH CONGRESS.

THE sketches given here are referred to and explained in the article on the Church Congress Exhibition at Portsmouth, in another column.

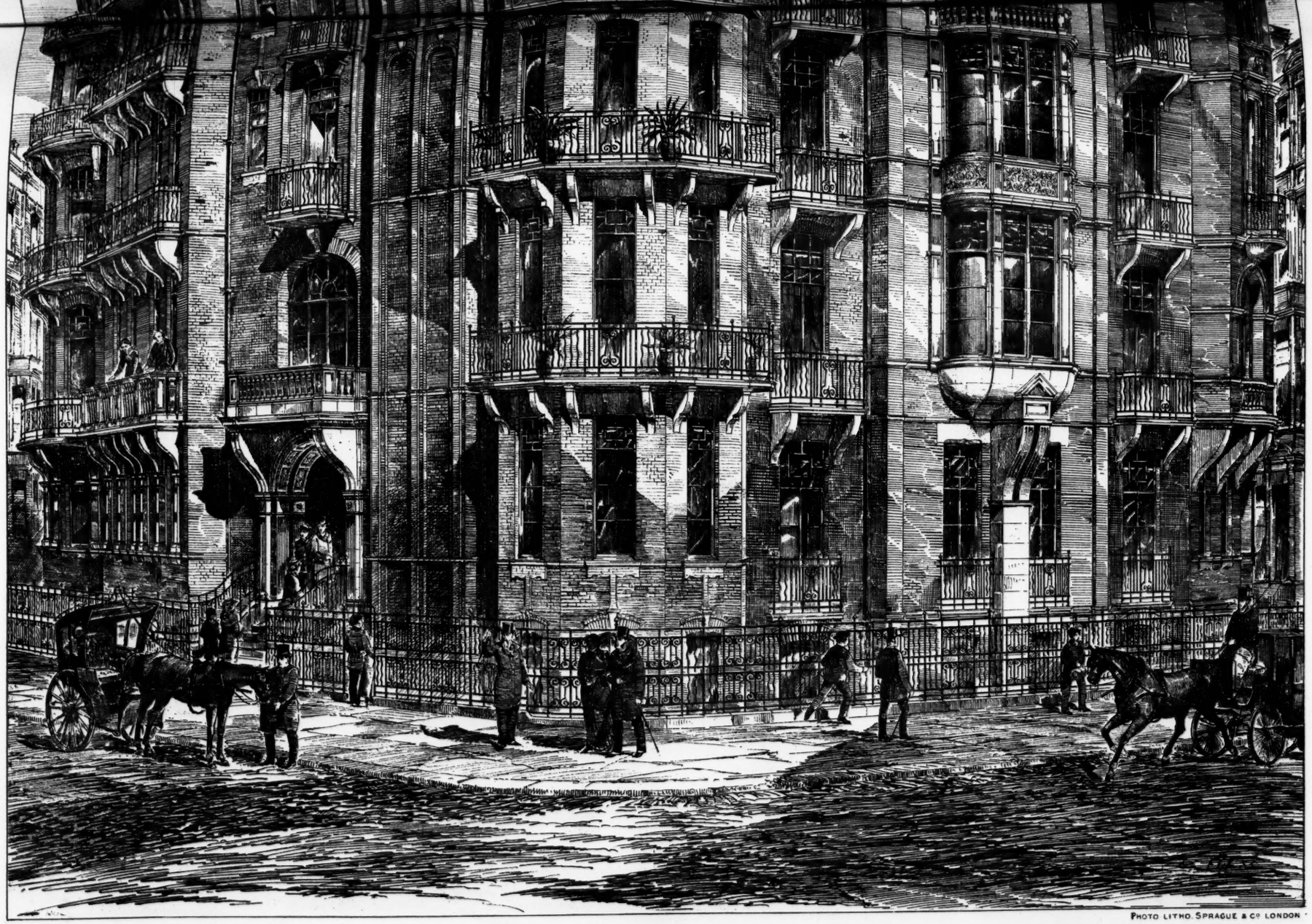
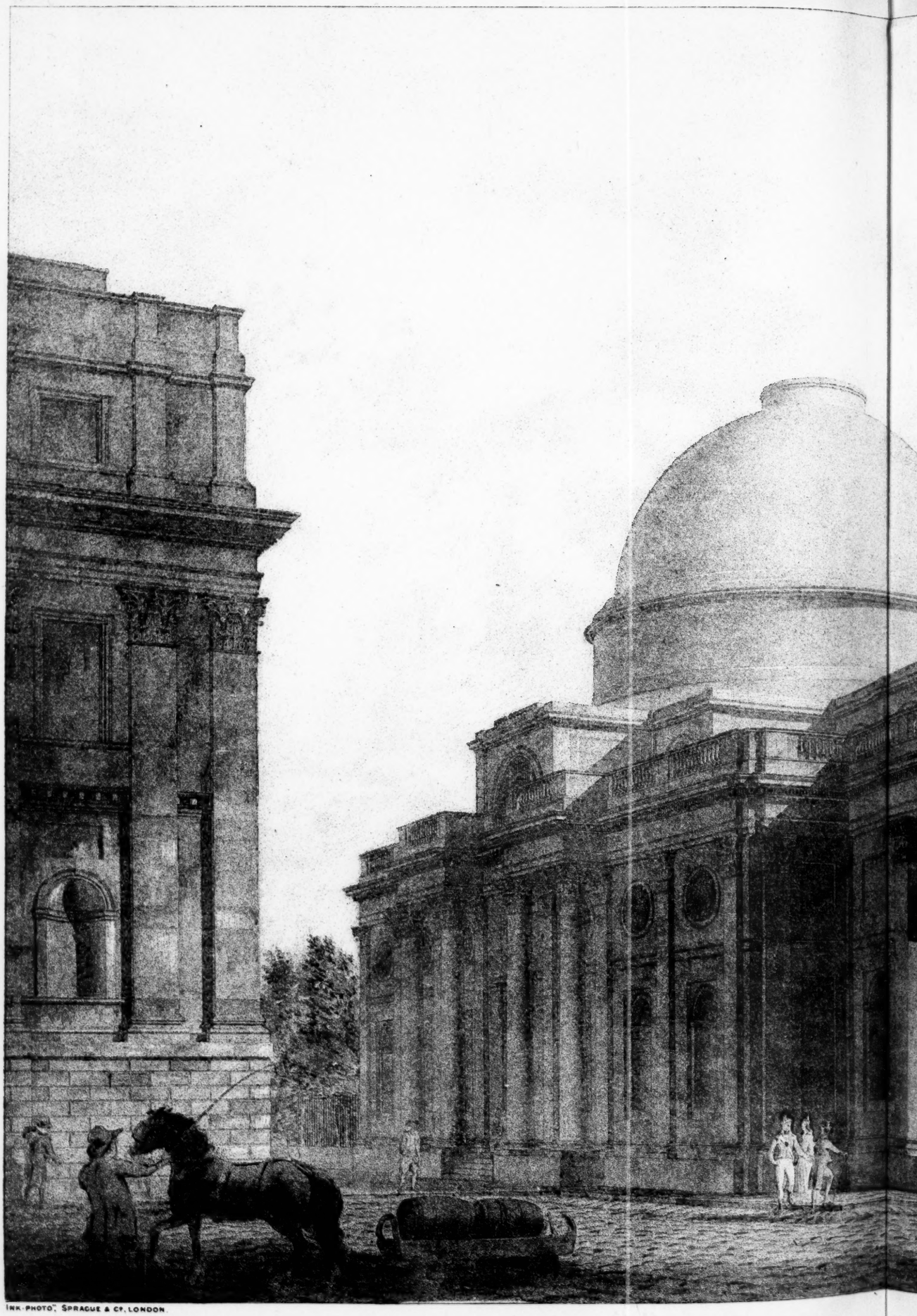


PHOTO LITHO. SPRAGUE & Co LONDON

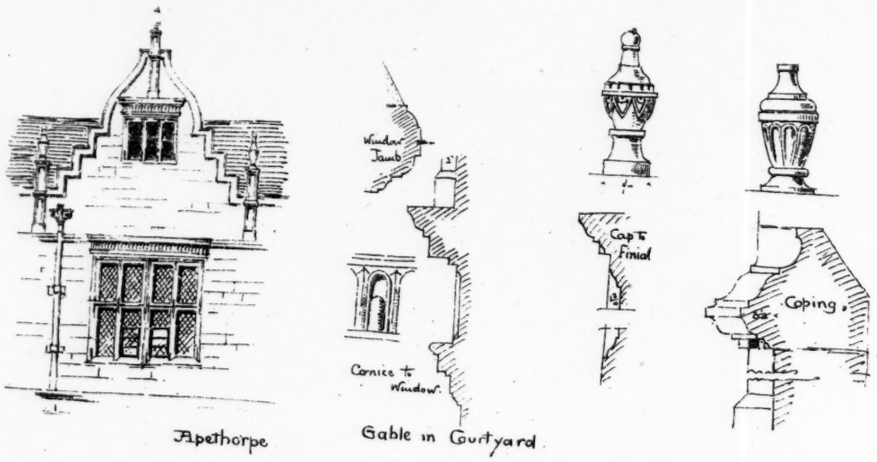
VIEW OF HYDE PARK MANSIONS. — MESSRS. C. EALES & SON, ARCHITECTS.



INK-PHOTO. SPRAGUE & Cº. LONDON.

DESIGN FOR AN EXTERIOR TO THE CHURCH

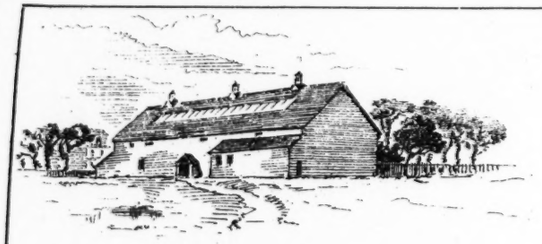
CHURCH OF ST. STEPHEN'S, WALBROOK.



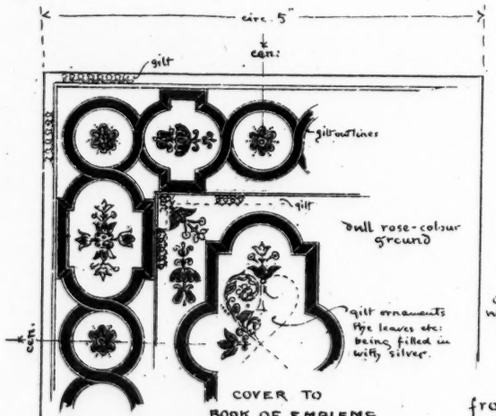
Wyman & Sons Photo Litho 74 Queen St London WC

SKETCHES NEAR STAMFORD.

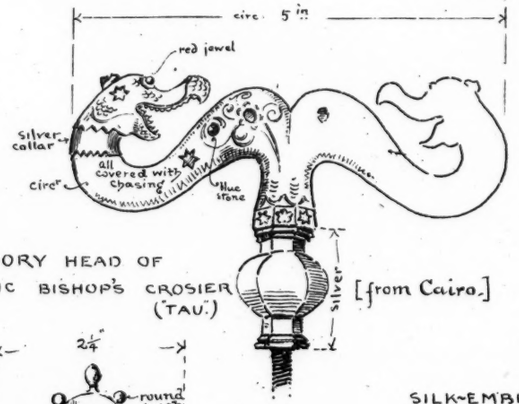
NOTES FROM THE ECCLESIASTICAL ART EXHIBN PORTSMOUTH.



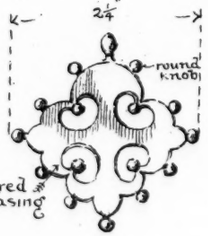
Sketch of Congress Hall from South.



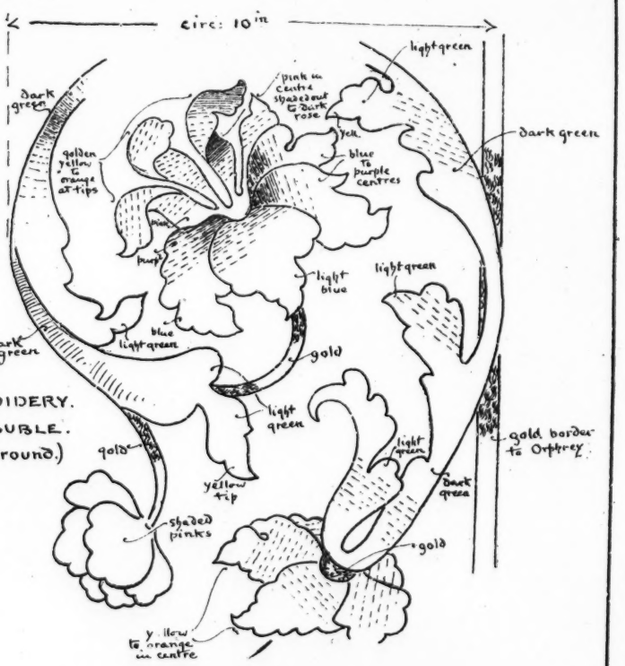
COVER TO BOOK OF EMBLEMS
Enamelled binding in gold & colours on vellum.



IVORY HEAD OF COPTIC BISHOP'S CROSIER ("TAU.") [from Cairo.]

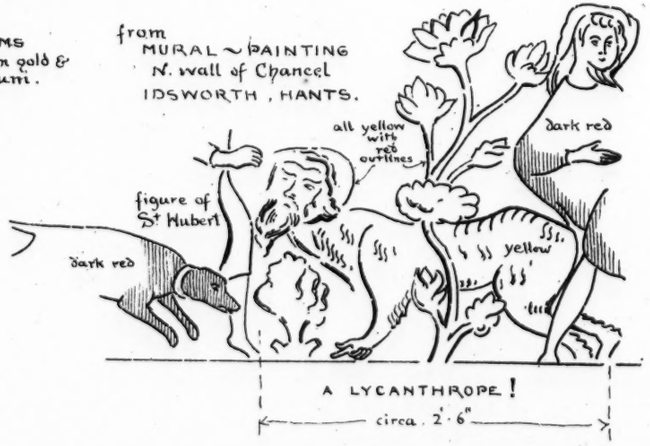


SMALL SILVER CROSS [RUSSIAN.]

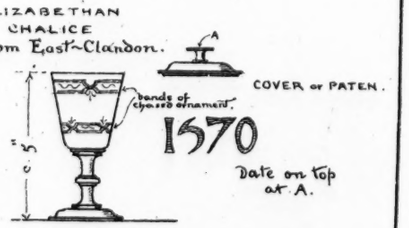


SILK-EMBROIDERY. OLD CHASUBLE. (white silk ground.)

Title page 1560. (German) painted.



said to have been used as a Communion Cup by the Revd Philip Henry.



MEMD Chalice at Chalton Hants same pattern and dated 1568

CHS RICHD PINK, Archt Delt Octr 1885.

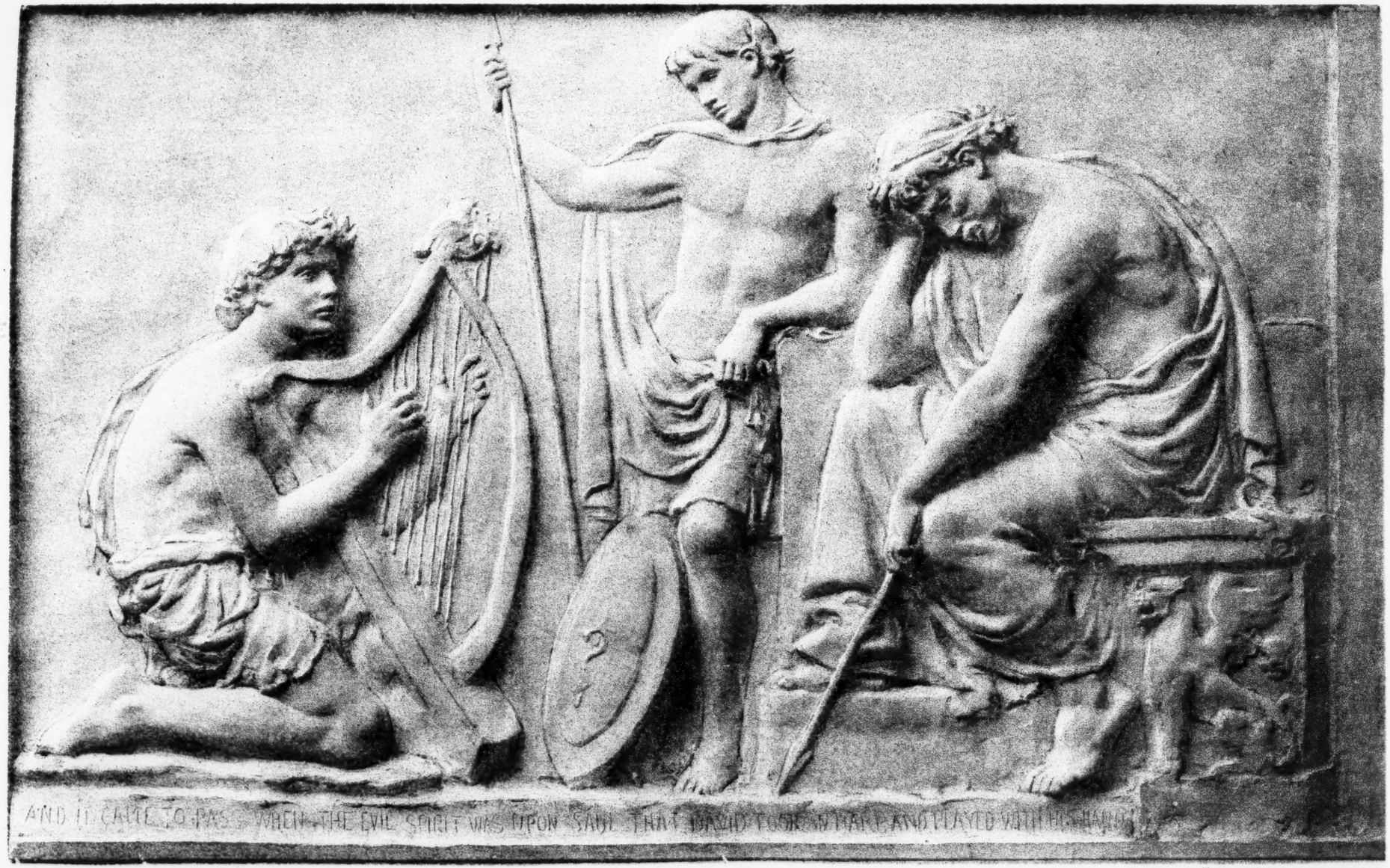
Wyman & Sons, Photo-Litho.

C. Queen St. London, W.C.

SKETCHES AT THE ECCLESIASTICAL ART EXHIBITION, PORTSMOUTH (CHURCH CONGRESS).

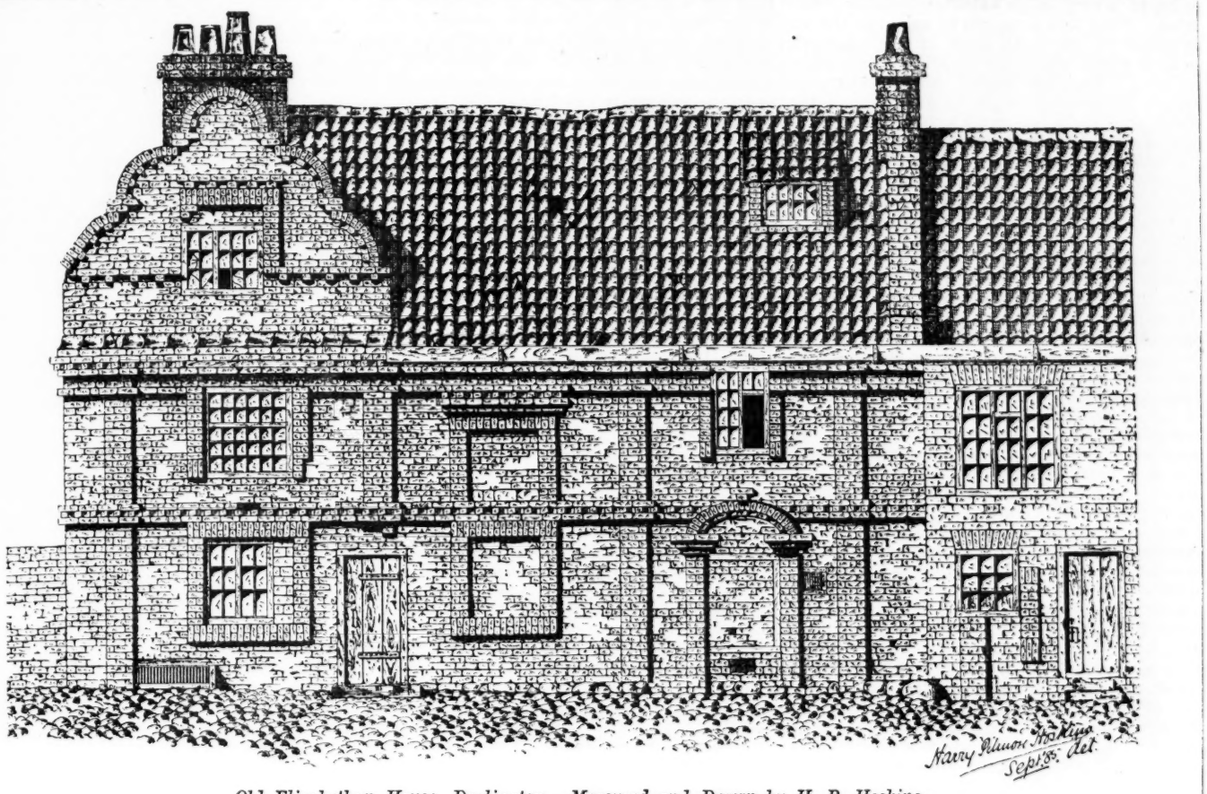
INK-PHOTO SPRAGUE & Co LONDON

A HOUSE AT SCARBORO.—Messrs. W. Sugden & Son, Architects.



INK PHOTO. SPRAGUE & Co. LONDON

DAVID PLAYING BEFORE SAUL — Miss Ellen M. Rope, Sculptor



Old Elizabethan House, Darlington.—Measured and Drawn by H. P. Hoskins.

OLD ELIZABETHAN HOUSE, DARLINGTON.

Little or nothing is known of the history of this interesting example of early brickwork. The only allusion made to it by Longstaffe, in his "History of Darlington," is that "John Hall (A.D. 1712) lived in the old Elizabethan brick house between Tubwell-row and the churchyard, now the 'Nag's Head.'"

It must, however, have been built long anterior to this date. The building is now divided from the churchyard by a narrow passage paved with cobble stones, called Church-lane, but owing to the fact that the house at one time stood absolutely in the Churchyard of St. Cuthbert's, it may fairly be assumed that it was formerly the residence of some ecclesiastic.

The general size of the bricks, which are of a darkish red and somewhat roughly made, is 10 in. by 5 in. by 2 in. Some, however, are nearly 12 in. long, but no difference exists in the width or thickness.

The building has been measured and drawn by Mr. Harry Pilmore Hoskins, of Darlington.

ARCHITECTURAL ASSOCIATION *CONVERSAZIONE.*

The Architectural Association *conversazione* was held on Friday, the 9th inst., in the Galleries of the Institute of Painters in Water Colours, Piccadilly, under the presidency of Mr. C. R. Pink. The work of the various classes was displayed on the walls of the central gallery, together with the drawings sent in in competition for the various prizes offered by the Association and the Architectural Union Company. The sketches made by the Travelling Student, Mr. H. D. Walton, were also exhibited. The following is a list of the prize winners:—

Architectural Association Travelling Studentship.—Awarded, with Medal, to Mr. H. D. Walton; Second prize awarded to Mr. R. W. Paul.

Architectural Association Medal (with 5*l.* 5s.).—Awarded to Mr. A. B. Mitchell.

Architectural Union Company's Prizes.—First (5*l.* 5s.), awarded to Mr. Alfred Hart. Second (2*l.* 10s), awarded to Mr. A. B. Mitchell.

Essay Prize.—No award made by judges as yet.

Elementary Class of Design Prizes.—First (3*l.* 3s.), to Mr. Alfred G. Hall. For the second and third prizes (2*l.* 2s. and 1*l.* 1s.), Mr. R. A. Rix and J. M. Stonier were bracketed as equal, the prizes to be equally divided.

Class of Design Prizes.—First (3*l.* 3s.), to Mr. A. S. Haynes. Second (2*l.* 2s.), Mr. F. Ward. Third (1*l.* 1s.), Mr. W. H. Raffles. Honourable Mention of the work done by Messrs. F. S. Grainger and F. Haigh.

Lecture on History of Architecture.—Prize awarded to R. A. Rix.

Class of Colour Decoration Prize (3*l.* 3s.).—Awarded to Mr. W. G. B. Lewis. Honourable Mention of the work of Messrs. H. Wilson, E. Herbert, and G. G. Woodward.

Class of Construction Prize.—First (3*l.* 3s.), to Mr. W. B. Gwyther. Second (2*l.* 2s.), to Mr. E. A. Jollye. Third (1*l.* 1s.), to Mr. F. S. Grainger.

Lectures in connexion with Class of Construction.—First (3*l.* 3s.), Walter Dewes. Second (2*l.* 2s.), A. J. White. Third (1*l.* 1s.), W. Shean, jun.

Class for the Study of Planning and Specification Writing.—First Prize (2*l.* 12s. 6d.), to Mr. H. Hutchings. Second (1*l.* 11s. 6d.), to Mr. A. Sykes.

Sketch-book Prize.—Awards postponed.

In addition to the work done by the students there was an interesting collection of water-colour drawings by members of the Association, including Messrs. R. Phené Spiers, W. J. N. Millard, W. H. Atkin Berry, Thos. E. Pryce, and others. The band of the 2nd Life Guards played a selection of music in the east gallery. In the galleries there was an interesting exhibition of objects of interest kindly lent by the firms named. Messrs. Morris sent some fine specimens of tapestry and other hangings, Messrs. Woollams sent some good wall papers and Messrs. Jeffrey's exhibits included a new "nursery" wall decoration illustrating the story of the "Pied Piper of Hamelin." Messrs. Doulton & Co. sent some of their art pottery, and Messrs. Longden stoves and chimney-pieces. Mr. Alfred Newman contributed some admirable specimens of wrought-iron work, consisting of lamps and other ornamental fittings and two interesting panels of various specimens, one of the most noteworthy objects being a large iron sign for the insurance office at the corner of St. James's-street. This will project some 14 ft. from the wall, and will certainly be a conspicuous object. Messrs. Hart, Son, Peard, & Co. exhibited bronze and wrought-iron objects of various design, some in the earlier Renaissance style, for which there is a growing demand. The bronze is found to be a better material than brass, as when it oxidises it becomes a warm mahogany colour. The wrought-iron is finished a steelly blue, which is stated to be very permanent. The same firm also exhibited a ewer designed by the late W. Burges, and photographs of the enamel shields designed by him for Lord Bute. The Coalbrookdale Company exhibited two stoves designed by the late Alfred Stevens,—the only two stoves said to have been designed by him. Messrs. Salviati, Burke, & Co. exhibited Venetian glass and mosaics. Messrs. Knowles exhibited some wall papers.

CIRCULAR HOSPITAL WARDS.

We have been requested to publish the following report of the discussion* which ensued on the reading of Mr. Saxon Snell's paper on "Circular Hospital Wards," read before the Architectural Section of the Sanitary Congress at Leicester, and published in our issue of the 26th ult. (p. 443):—

Captain Douglas Galton said,—I had the opportunity about six weeks ago to visit the Antwerp Hospital. That hospital is a very magnificent one, and it has been completed for about six or eight months. But it is not yet full; in fact, only about four pavilions, I think, have been fully occupied since its opening. Therefore, it is impossible to arrive at any decided opinion at present as to the hygienic value or otherwise of these circular wards from the persons who are in charge of the hospital or from the nurses. The hospital consists, I believe, of eight large circular pavilions of two stories each, and these are about 61 ft. internal diameter. They have a large number of windows arranged for placing a bed between each two windows. At least, it was so intended, but the beds are in reality arranged promiscuously, and without reference to the windows, and what struck me certainly very strongly was the radiation of the beds. Even in these large wards (61 ft. in diameter) the comparative distance between the heads and the feet of the beds was very marked, and it struck one that the distance between the feet of two adjacent beds was very small. Of course, in respect of nursing, it is very undesirable that you should not have the beds parallel to each other,—although, as far as the emanations from the patients are concerned, I suppose it would be better to have the heads far apart. In this Antwerp Hospital the central space (which Mr. Saxon Snell says is the nurses' room) is a very great impediment both to the cheerfulness and to the circulation of air from the windows in the wards. It is also a most unfit place for a nurse to live in permanently, for she can get no fresh air into it at all. What air she does get is from the ward itself or that forced in to some extent by the ventilating fans. The Antwerp Hospital has been designed

* Postponed from last week for want of space.

to be, in a very large extent, artificially ventilated. They have a system of warming the air by means of hot-water pipes in the basement, so as to admit warm air into the wards when required. They also profess to have an exhaust system for drawing off the impure air from the wards and also a hot-water system (or a steam pipe system, I think it is, but I was not able to get into that part of the building and see the apparatus on the occasion I was there) for warming the incoming fresh air which is carried up through the columns supporting the floors and ceilings of the upper wards. This system of exhaust ventilation is supplemented by a system of fans. These fans are intended to drive in air from towers placed at two points in the enclosure at a height of about 20 or 25 ft. above the ground, and to force this air into the wards either through the heating apparatus or otherwise according to whether the time of year is winter or summer. Now I found in this hospital exactly the same thing prevailing as I have always found in hospitals ventilated by artificial means. I have visited several of such hospitals. There are several in New York which are intended entirely to depend on artificial ventilation; and I had an opportunity of visiting those hospitals three or four times, but it so happened (and I invariably found it to be the case) that this artificial ventilation was never at work when I happened to pay my visits. It was not at work when I was in Antwerp; and it was never at work at any of the places I visited in New York. They all said, "The machinery is a little out of repair, and will not be in working order for a day or two." At Antwerp, the man told me the same thing: "The apparatus is not at work to-day." I am most unfortunate in my visits to these places. I have always wanted to examine these special arrangements, but it always happens that the apparatus is "out of repair," or that it has stopped working for I day or two, or something of that sort. But a think it would be quite impossible to imagine that these large circular wards could be properly ventilated without artificial ventilation where the wards are arranged as they are in Antwerp. I am only now speaking of Antwerp, of course, and I certainly shall take an opportunity of visiting that hospital again, as soon as I can, in order to try and study the matter further. But I agree most entirely with the arguments which Mr. Snell has adduced. I think he has put the matter in the clearest possible light, and I only wish the various hospital authorities who are looking out to construct hospitals, and who have taken up the idea that a circular hospital ward would be very nice, would read Mr. Saxon Snell's paper, for I am quite certain that not only will they find the circular system of hospitals to be much more expensive, but I am equally convinced that it will not be found satisfactory in practice.

Professor De Chaumont.—This subject is one of extreme importance, because, for some years past, the attractions of this system seems to be increasing. I confess that at first it struck me the idea was rather a pleasing one, and when Mr. John Marshall wrote a pamphlet on the subject some time ago in London the system was hailed with a great deal of welcome. I must confess that, although I visited the Antwerp Hospital when it was just completed, and before it was furnished or occupied, and having since seen the plans of other hospitals, I had really not given the subject sufficient attention to appreciate the difficulties which Mr. Saxon Snell has so excellently brought forward. After reading his paper, I must say that the arguments he has adduced seem to me to be at present very difficult indeed to answer. I quite agree with Captain Douglas Galton in what he has said with regard to the construction of the Antwerp Hospital. The wards are by no means attractive in appearance, and the erection in the centre is one that takes away very much from the cheerfulness of the ward, and as to putting an unfortunate nurse into this central cage, I look upon the thing as perfectly monstrous. In one place I have seen the system tried with some apparent success, but in this example (the West Kent Dispensary at Greenwich) there are, I think, only ten beds in the ward. There I thought it had rather a cheerful aspect, and I was rather pleased with its appearance, but when one comes to consider the question in the exhaustive way in which Mr. Snell has considered it, I confess my views are very much changed in the matter. I see that the additional expense is enormous, and, as Mr. Snell has said, it would be very difficult to point out any additional advantages there would be to the patients. The point that has always been contended for by the advocates of the circular system has been, as Mr. Snell has shown, that a greater amount of wall-space is given per patient, but when we come to take away the entrance lobbies and the openings necessary for the closet vestibule we find the wall-space reduced below that obtained in the rectangular system, and there is such a very large space in the centre which is really superfluous that the expense seems to be increased in a most inordinate way. The adoption of this system will not I am afraid, as Captain Galton has said, answer the expectations of those who are proposing it. But the matter is one of very great importance, seeing that it is now strongly advocated by the Director of Works at the War Office (Sir Andrew Clarke), and that the proposal to build a hospital on this principle and on a large scale at Malta is now seriously entertained. Plans and elevations have now been before the public for some time and have been exhibited at the Royal Academy all this summer. When we come to consider how many beds would be required for the hospital of a large military station like Malta it will be at once seen that a very large expense will have to be incurred which will not be in any way commensurate with the advantages to the patient.

Mr. H. H. Collins coincided generally with the views expressed by Mr. Snell, and regretted that the system of building circular hospital wards had proceeded so far as it had. This was not the first time he had found it necessary to express himself adversely to this circular system. The last time was at a meeting in London of the Hospitals Organisation Society, where he was pretty well set upon, and he was therefore gratified to find that on this occasion his opinions were being supported. He thought Mr. Snell had treated the matter very tenderly, and that he could have scored many more points had he chosen. A circular-shaped building would be enormously more expensive than one of rectangular form, but Mr. Snell had not apparently gone much into that part of the question.

Mr. E. C. Robins also concurred in the views expressed by Mr. Snell, and he was pleased to find that such high authorities as Professor De Chaumont and Captain Douglas Galton were in accord with him.

Mr. P. Gordon Smith (President of the Section).—At this late hour of the day, and with so much more work yet to get through, it will not do for me to go into a long dissertation on the subject of circular wards. I may, however, say that I do not fall in with all that has been said upon the subject. On the occasion referred to by Mr. Collins when the matter was discussed at a meeting in London, he was the odd man on the wrong side, while I was opposed to him and in the majority. On this occasion I am afraid I am very much in the minority. I think Mr. Snell has rather exaggerated his case, very much so in some particulars; but it is difficult to go through all the points he has raised. However, there are a few features about the circular ward system that, I think, deserve more attention than has been paid to them. There is the question of shape of site. If you have a site on which you cannot build a long ward, you may be pretty well able to build a circular one. In fact, it often happens that if a ward is to be built there at all it must be circular. There is another feature. A circular ward will stand less chance of interfering with a neighbour's rights of light and air, and will be a better shape for the admission and full circulation of air than if of rectangular form. There are in many towns sites where it would be difficult, if not impossible, to put up a ward-block of the ordinary oblong shape, and, of course, on these sites it will be admitted that a circular ward would be the right thing to adopt if a hospital is to be there at all. For my own part, I should like to see hospitals outside the towns altogether. Then as to aspect, you can very often do better with regard to a circle than an oblong. As regards the question of cost, Mr. Snell's figures are estimates, and, as I am inclined to think, they are exaggerated. But I have got here papers from two architects who have actually built circular hospitals, and they say that they are cheaper. At any rate, they show that there is positive reduction in quantity of brickwork used.

Mr. Snell.—Pardon me, I have not entered into the question of cost of construction at all. I have ignored it.

Mr. Gordon Smith.—There is an incidental reference to it. I do not wish to push this question, but I wish to say that there are two sides to the question even of cost. I have also a long letter from Mr. Burdett, who is at Amsterdam, and in it he advocates the system, and he points out that a great deal of the fault found with the Antwerp hospital is due to faulty administration. Then, as regards ventilation, I have heard men (whose opinion is, at any rate, worth listening to) express a very strong conviction that the facilities of ventilation are at least as great, and probably much greater, in a circular than in a rectangular ward. So much so, indeed, that it is considered possible to admit of a diminished amount of cubic space in the case of a circular ward, whereas such a thing would not be at all permissible in the case of a rectangular ward. In this way the cost of the circular ward would be largely diminished. As to administration, there is much better control, less running about, and less fatigue, in a circular ward than in a rectangular ward. I think that is beyond question. Bearing in mind these points, I still think that the subject deserves careful consideration. I will not say any more upon the matter at present, but will leave it for hospital authorities to judge for themselves.

Mr. Saxon Snell, in reply, expressed himself gratified at finding that, with but one exception, his opinion upon the question of circular hospitals had been unanimously endorsed by the meeting. He could not at that late hour reply in detail to all Mr. Gordon Smith's arguments, for most of them were expressed in very general terms; as, for example, his assertion that the figures and estimates dealt with in the paper were exaggerated. Mr. Snell could only assure the meeting that all the items in his estimates were most carefully gone into, and that the results of the calculations were rather understated than excessive. As for the question of difference of cost between a building of circular and one of rectangular form, there was no doubt in his mind that the circular one would on calculation be found very much the most expensive, but he had expressly omitted this large item from consideration in order to avoid opening up the question. With regard to the statement that sites might exist upon which parallelogram-shaped wards could not be placed without interfering with the neighbours' rights of light and air, all he could say was that if such sites did exist no hospital ward ought to be built upon them at all. But he only knew of two instances where circular wards had been erected upon this plea, and in both these cases it was quite clear to him that parallelogram-shaped wards would have been much more suitable, and would not have interfered in any greater degree with the rights of neighbours. He was quite at a loss to understand how a circular ward could possibly be thought to give greater facilities for ventilation. In the rectangular wards it was usual to get rid of the foul emanations of the patients by providing outlets into flues situated in the side walls directly over the heads of the patients. Surely that was a better plan than carrying the deleterious matter across the ward, a distance of from 30 ft. to 35 ft. into the central ventilation shaft, as recommended by the advocates of the circular system.

THE RESISTANCE OF BUILDING MATERIALS TO FROST.

This subject has from time to time engaged the careful attention of scientific men, and amongst others Brard, Braun, and Tetmajer have published in various Continental journals (as well as in special treatises) the results of their detailed investigations. Brard's test consists in the saturation of the material to be tested with a solution of glauber or other salt of a given strength, and in then permitting the expulsion of the salt by crystallisation, it being supposed that the salt would produce an effect similar to that of the congelation of water. Braun* institutes a comparison between the strength of extension of the material and the force of the solidifying water, assuming that a material is not capable of resisting frost when the former is less than the latter. Tetmajer

* See the *Builder*, July 12, 1884 (p. 51).

employs a number expressing the proportion between the resistance to pressure in a dry and in a wet state. In addition to the above, Hempel's test with muriatic acid deserves mention.

In reviewing these processes, Herr A. Blümcke points out in the *Thonindustrie Zeitung* that all of them subject the material to conditions which are not to be found in practice, while their more or less complicated nature forms an obstacle to their adoption. On the other hand, the process of Bauschinger is more practical, consisting in the exposure of the material twenty-five times to frost in the open air, the strength before and after the test serving as a guide to the resisting power. The production by artificial means of the needful degree of cold suggests itself, but hitherto this process has only been accomplished by the aid of chemicals, which affect the substances treated in such a way as to prevent the ready appreciation of the effects produced by frost. Hence a proposal of Hericat de Thury has been carefully studied by Herr Blümcke, with the result of his perfecting the following method:—

The stones to be tested are placed two at a time in a wire framework suspended from a rod. These are placed in a cylindrical metal vessel sloped off at the foot in funnel form and with a cover. This is enclosed in a larger vessel of the same shape, and held in position by supports. There is a space of 2 in. around the smaller vessel, which space is filled with a refrigerating mixture. A vessel, 2 in. in height, is also placed above, which is filled with the same mixture. At one time an escape-pipe had been in use at the lower part of the apparatus, but it was found more practicable to empty it after each operation by a syphon. The cold mixture used consists of three parts of ice in small pieces and one part of powdered rock salt, its cheapness being a considerable advantage. The lowest temperature obtained in the interior of the apparatus was below 10° Fahr., although a still lower temperature could have been arrived at. Small thermometers were inserted in the stones, and although two hours sufficed to bring these to the temperature of the surrounding air, the stones were subjected to the process during a period of three hours. Felt or sawdust was used to procure isolation from the outer air, the former being more effectual, but the latter preferable on account of its cheapness.

In the selection of the stones, as well as in the general conduct of the experiments, Herr Blümcke had the advantage of the advice of Professor Gottgetreu, the trials being conducted in the laboratory of Professor Von Beetz. The stones were in cube form, the length of the sides being about 3¼ in., and the surfaces roughly dressed. Two specimens were tested in each case, and one of them was completely saturated with distilled water. Boiling was, however, avoided, so as not to expose the material to a degree of heat which it is not in practice called to endure. When a material is very porous it is impossible to freeze it when thoroughly saturated. After removal from the refrigerating apparatus the cubes were placed in a small trough covered with water, and left there three hours, so as to be again brought to the temperature of the room. When taken out the stones were covered with a coating of hoar frost, and if then left for some time in water a loosening of small particles was perceptible in the portions not capable of resisting frost. Before the next subjection of the stones to the refrigerating process the surfaces were gently rubbed with a feather. Herr Blümcke repeated the process until distinct traces of injury were visible, such as cracks, peeling, loosening of corners, &c. If a stone had been ten times subjected to the frost, with such traces appearing, the quantity of the mass separated after the evaporation of the water was ascertained, and the process continued until destruction commenced. A second cube was subjected to a stream of water during one hour upon three sides. In this case there was no attempt made to ascertain the loss of volume, but the application of the water was continued until injury became apparent. These external appearances were quite the same as if the stone had been saturated, but were considerably later in manifesting themselves.

From these experiments Herr Blümcke has deduced the theory that a material has higher properties of resistance to frost, according to the restriction of the loss in weight caused by the repeated application of the freezing process. In trials made upon sandstone the following results were obtained. In all cases cracks were finally visible which ran close to each other (parallel to one or several edges), and produced crumbling when the operations were persevered with.

Name.	Specific gravity.	Water taken up in per-centage of volume.	Number of freezings.	Loss in weight, Grammes.
1. White, Langenzenn	1·97	22·6	2	5·0088
2. Green, Ellingen.....	2·00	24·1	3	0·7446
3. Grey, Oberdachstetten..	2·06	21·1	3	0·5910
4. Yellow, Lengast	1·83	32·6	3	0·4562
5. Red and white striped, Waldaschaff	2·22	11·0	3	0·4067
6. Green sandstone, Albech	2·14	18·1	4	0·2835
7. Yellow, origin unknown	2·34	14·6	6	0·2541
8. Yellow, Zeil	2·18	13·9	8	0·1058
9. Grey, Gründen	2·44	13·7	13	0·0835
10. Red, Rothenfels, A.M....	2·31	11·3	24	0·0820

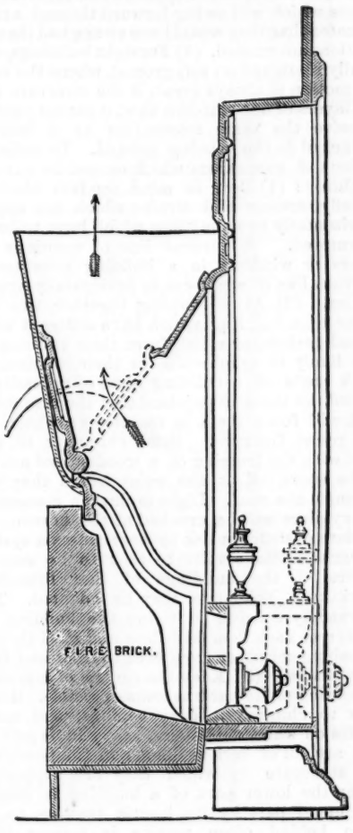
Large pieces were detached from No. 1, and cracks appeared all over Nos. 2 and 3. On No. 4 there were two kinds of coatings, a darker one, which broke off more than the other, and a lighter one which showed cracks. Nos. 6 and 8 peeled on the surface, and No. 7 was much cracked. After the thirteenth freezing of the ninth type a splinter became detached from one corner, but cracks parallel to the edge were not visible till after the forty-third freezing.

By proceeding in this way it is not necessary to wait for the visible destruction of the material. Coupled with the definition of the degree of resistance to frost is an approximate estimate of the period a stone will last, as it is not difficult to arrive at the number of alternations during an average winter between frost and thaw. When thoroughly saturated stones are tested, the results are applicable to the most unfavourable circumstances, and are consequently the more reliable. Should a material not show injury at the temperature applied, this fact does not establish its power of resisting frost, but renders advisable the trial of a still lower temperature; in no case, however, below the range to which, in practice, the stone would be subjected. Finally, Herr Blümcke does not claim that he has solved all the questions connected with this interesting subject, but considers that his illustration of what may be done with simple means by skilful and capable hands may not be devoid of value to the cause of science.

The Bessbrook and Newry Electrical Tramway.—This tramway has been completed and inspected by Major-General Hutchinson and Major Armstrong, R.E., on behalf of the Board of Trade. The Bessbrook Spinning Company, who own very extensive mills and granite quarries at Bessbrook, have hitherto been obliged to cart all their coals, goods, and stores from the wharves and railway stations at Newry, a distance of three miles. The directors of the company have for some time had in contemplation the establishment of a tramway between Newry and Bessbrook, but the great obstacle to the carrying out of this has been the difficulty which would be encountered at both ends by the transhipment of the goods being necessary, as there were difficulties in carrying the tramway at the one end to the railway stations, and at the other to the various departments of the mills. These difficulties have, it is stated, now been entirely overcome by a modification of the usual wagon. The wagons are constructed with wheels having no flanges, and of sufficient width of tyre, 2½ in., to allow them to run upon the ordinary roads of the country. The front part of the wagon is carried on a bogie which can either be pinned so as to make a fixed wheel base, or can be allowed freedom of movement as in any ordinary road vehicle. To the fore bogie horse shafts can be attached for use on the roads. On the outside of the ordinary tramway rails second rails have been laid of a lighter section to which the ordinary rails act as a guard. The flangeless wheels run upon these outside rails, and their motion is restricted by the inside rails. This plan, suggested by Mr. Henry Barcroft, director of the Bessbrook Spinning Company, is stated to have been entirely successful. The whole of the electrical details and all matters connected with the electrical equipment have been designed and carried out by Dr. Edward Hopkinson, of Manchester. The permanent way has been constructed under the direction of Mr. J. L. D. Meares, C.E., of Newry, assisted by Mr. F. S. Thomas, C.E.

THE "AS YOU LIKE IT" GRATE.

This is the title given to a new grate just introduced by Messrs. George Wright & Sons, of 113, Queen Victoria-street. The title is appropriate, for the grate is fitted with a shell or firebox, which can be drawn out or pushed in as desired. When the shell is drawn out a powerful draught is created, and the fire burns under the conditions of free combustion. If during mild weather it is desired to reduce the fire, the grate can be converted into a slow-combustion stove by pushing in the shell which holds the fire. The invention appears to provide an excellent arrangement for a sluggish



draught, as when a small slow-combustion fire is wanted,—which in an ordinary grate might be liable to smoke,—it is pushed well in under the hood or canopy. The grate is the subject of a patent recently taken out by Mr. George Wright. The annexed diagram shows the firebox pushed in to form a small fire with a solid brick bottom, thus providing a "slow-combustion" grate. The dotted lines indicate the position of the range of fire-bars when drawn out to afford a large fire, with an open-bottom or quick combustion grate. The arrows show the direction of the smoke, the inner valve being open. The dotted lines by the lower arrow show the inner valve closed when the grate is not in use.

BUILDINGS IN EARTHQUAKE COUNTRIES.

The fifth report of the Committee, consisting of Mr. R. Etheredge, Mr. Thomas Gray, and Professor John Milne (secretary), appointed by the British Association for the purpose of investigating the earthquake phenomena of Japan (drawn up by the Secretary), was published in a recent number of *Nature*. The following extracts are of interest:—

Buildings in Earthquake Countries. — As during the last few years so much destruction both to life and property has taken place in various parts of Europe, it seems that an epitome of the results of observations and experiments carried on in Japan relative to construction in seismic districts might not only be interesting, but possibly it might also be of practical value. When erecting a building it appears that we ought first to reduce as far as possible the quantity of motion which ordinary buildings receive; and, second, to construct a building so that it will resist that portion of the momentum which we are unable to keep out.

To reduce the momentum which usually reaches a building the following may be done :—

(1) Institute a seismic survey of the district or area in which it is intended to build, and select a site where experiment shows that the motion is relatively small. (2) For heavy buildings adopt deep foundations (perhaps with lateral freedom), or at least let the building be founded on the hardest and most solid ground. It is, perhaps, because the tops of the hills in Tokio are harder than the plains that they have relatively the least motion. A building only *partially* isolated may be exceedingly dangerous from the fact that motion entering in the unprotected side will make the excavations (cuttings, valleys, &c.) upon the opposite side into free surfaces which will swing forward through a range greater than they would have swung had the excavations not existed. (3) For light buildings, especially if erected on soft ground, where the range of motion is always great, if the structure rests on layers of fine cast-iron shot, it cannot possibly receive the same momentum as a building attached to the moving ground. To resist the effects of momentum which cannot be cut off a building: (1) Bear in mind the fact that it is chiefly stresses and strains which are applied horizontally to a building which have to be encountered. A vertical line of openings like doors or windows in a building constitute a vertical line of weakness to horizontally-applied forces. (2) Avoid coupling together two portions of a building which have different vibrational periods, or which from their position are not likely to synchronise in their motion. If such parts of a building must of necessity be joined, let them be so joined that the connecting link will force them to vibrate as a whole, and yet resist fracture. Brick chimneys in contact with the framing of a wooden roof are apt to be shorn off at the point where they pass through the roof. Light archways connecting heavy piers will be cracked at the crown. To obviate destruction due to these causes a system of construction similar to that to be seen in several of the buildings of San Francisco, Tokio, and Yokohama may be adopted. This essentially consists of tieing the building together at each floor with iron and steel tie-rods crossing each other from back to front and from side to side. (3) Keep the centre of inertia of a building or its parts as low as possible. Heavy tops to chimneys, heavy copings, and balustrades on walls and towers, heavy roofs and the like are all of serious danger to the portion of the structure by which they are supported. When the lower part of a building is moved, the upper part by its inertia tending to remain behind often results in serious fractures. All the chimneys in Tokio and Yokohama which have fallen in consequence of their ornamental heads have been replaced by shorter and thicker chimneys without the usual coping. The roof of a portion of the Engineering College rests loosely on its walls, and has, therefore, a certain freedom. In Manila many heavy roofs have been replaced by roofs of sheet iron. Walls may be lightened in their upper parts by the use of hollow bricks. Such vertical motion as may exist is also partly obviated by light superstructures. Vertically-placed iron tie-rods give additional security. If these and other rules, which are the result of experiment and observation, could be adopted in earthquake countries, it is certain that the loss of life and property might be greatly diminished.

DUST AND REFUSE.

Sir,—Many have been the remarks from time to time as to house or home dust and refuse, but there is one side of the subject which, as far as I am aware, no one seems to have touched upon, viz., the workers who have to sort it.

But a few days back a deputation from St. Mary's Hospital visited the authorities at Paddington Vestry-hall, stating that the impure particles from a neighbouring dust-yard (wharf) were very injurious to many of their patients. A great deal of the offensive smell in burning bricks is said to be (and correctly so) caused by rotten matter among the ashes used (tea leaves, &c.)

Now, sir, of any of this refuse it may be said that not so very many days ago it was sweet and clean within our homes, every sort of material being separate from the other. Therefore, is it not a strange proceeding to mix them all together, when no longer wanted, in one dust-bin, to be kept till putrid, then to be carted away into heaps, and there sifted and sorted back again into each separate kind by human hands? Why should all kinds of refuse be thus first mixed together, necessitating its being thus sorted or unmixed when half putrid?

The paper and rags are much lessened in value by getting rotten.

Suppose the refuse were divided into three lots :—1st, ashes from fires, which if kept dry, might be emptied every two months or oftener; 2nd, tea-leaves, vegetable, and all wet refuse, to be emptied daily; 3rd, all other kinds of refuse for sorting, &c., which might be emptied three times a week. A couple of buckets hung up inside most dust-bins would answer the purpose.

Thus, neither the burning brick-kilns nor the dust-bins in our homes would be so offensive, nor yet the yards where the workers have now to sort back from among putrid matter what their fellow creatures have needlessly mixed together whilst sweet.

R. Felix Campbell.

THE SUPPOSED PORTRAIT OF SHAKSPEARE.

Sir,—In the *Builder*, October 3rd, 1885, p. 483, you say a new portrait of Shakspeare has been discovered by Mr. E. Walford in a shop at the West End. Not having seen the paragraph before, I now beg to correct it. The portrait belonged to a Mr. Kinton, of Paddington, who died in 1865, aged ninety-one. Mr. Kinton bequeathed it to his medical attendant, from whom I received it several years ago, and still have it in my possession.

W. Grisbrook.

6, *Panton-street, Haymarket.*

R.I.B.A. CHARTER.

Sir,—I hear there were but few Associates present at the meeting called for last Monday.

As an absentee myself, I should be glad to explain that I had fully intended putting off other engagements so as to be present, and, if necessary, to call attention to the desirability of Associates having a voice in the forming of the new by-laws. But, on reading the circular issued by the Associates' Committee, as well as the resolution proposed to be put to the meeting by Mr. Mark H. Judge, I felt there was nothing more to be done, that the debateable ground was well covered by the proposed alterations of the draft charter, and that the resolutions would be carried unanimously; and therefore I considered it was not so necessary to attend as I had at first thought.

Probably many others were absent from similar reasons.

R. Stark Wilkinson, A.R.I.B.A.

PROVINCIAL NEWS.

Ilkeston.—At a meeting of the Ilkeston Local Board last week a report was presented from Mr. W. H. Radford, Assoc. M. Inst. C.E., Nottingham, recommending the Board to utilise for the supply of this town the water now being pumped from the old workings by the Manners Colliery Company. The owners of the colliery are obliged to pump the water out of the workings in any case, and at present it has been entirely wasted. Ilkeston is at present insufficiently supplied with water from several small pumping stations at different parts of the district, whence the greater part of the water is pumped to a small open reservoir situated in the centre of the town at an elevation which does not command the whole of the district. The remainder of the water is pumped to a good covered reservoir at Shipley at an adequate elevation. Mr. Radford recommends the disuse of the small pumping stations (except in case of emergency) and suggests that a 12-in. main should be laid from the Manners Colliery pump to the Shipley reservoir at a cost of about 2,000*l.* The Manners pump is a very large beam condensing engine, and is sufficiently powerful to lift the water to the height required, and an ample supply for the whole district of about 276,000 gallons a day could be supplied at a saving of some hundreds a year on the present pumping expenses, in consequence of the lift being less and the pump more economical. The Manners water has been analysed by Dr. Truman, who pronounces it suitable for drinking purposes. Mr. Radford's report was referred to the Highway and Water Committee.

St. Helen's.—The Town Council of St. Helen's have instructed their Engineer, Mr. George J. C. Broom, Assoc. M. Inst. C.E., to prepare plans for the main drainage of the borough, and report as to the utilisation of the sewage.

Bromsgrove.—Two new blocks of almshouses, containing three houses each, have just been built by the Trustees of the Consolidated Charities. Each house comprises a porch, a comfortable living-room and bedroom, pantry, coal place, and small scullery, &c., while in an isolated building at the rear of the premises are arranged two wash-houses, with other necessary out-offices. Each house is intended to accommodate two persons, either an aged married couple or two single persons. The new houses are built in red brick and roofed in with purple tiles, the porches and gablets being framed in oak, and having oak bargeboards. The cost of building the two new blocks was about 1,020*l.*, while an expenditure of about 366*l.* has been involved by the additions, improvements, and repairs to the three old adjoining blocks. The work has been carried out by Messrs. Brazier & Weaver, contractors, from the plans and specifications and under the direct supervision of the architect to the trustees, Mr. John Cotton, of Birmingham.

Ipswich.—The *East Anglian Daily Times* says that the exigencies of business have caused great alterations in that old by-way of Ipswich known as the Thoroughfare. The premises of Messrs. Alston & Moir, tailors, have just undergone an entire remodelling. The two-storied house, with yard attached, which occupied the northern end of the site, has been pulled down, and the area thus acquired thrown into the shop, which is now 74 ft. long, with a depth at the north end of 30 ft. Mr. E. F. Bisshopp, architect and diocesan surveyor, Ipswich, designed the alteration; Mr. F. Dupont, Colchester, was the contractor; and Messrs. Stearn & Sons executed the plumbers' and decorators' work.

Manchester.—Under the direction of the Markets Committee of the Corporation of Manchester, a few months ago alterations and improvements were made on the Shudehill side of Smithfield Market; and now a large extension is approaching completion on the opposite side, the portion abutting on Oak-street and Copperas-street. This latest extension, covering an area of nearly 7,100 square yards, exclusive of roadways, is designed mainly for the advantage of local farmers, gardeners, and cottagers, who have hitherto been compelled in the height of the season to stand in the streets adjacent to the market, thus blocking up to some extent the thoroughfares and being subject to much personal discomfort in the event of bad weather. To provide the requisite space for this extension of the fruit and vegetable market, the Markets Committee transferred the dealers in old clothes and second-hand articles from what was known as the Old Clothes Market to a new building specially constructed for their use on the opposite side of Oak-street. Messrs. Mangnall & Littlewoods, of Manchester, prepared the plans for the extension, and the execution of the work has been entrusted to Messrs. W. Southern & Sons, builders, Salford.

CHURCH-BUILDING NEWS.

Marylebone.—Christ Church, Marylebone, which was re-opened on Sunday, October 4th, has been re-decorated by Messrs. Campbell, Smith, & Campbell, under the superintendence of Mr. A. W. Blomfield.

Devizes.—Special services have been held in St. Peter's Church, Devizes, to "dedicate" the new choir-stalls which have been placed in this church in memory of the late Vicar (Rev. H. A. L. Grindle), by his clerical friends. The stalls (four in number) are of massive English oak, and are in the Early English style, like their immediate surroundings. They have been executed by Mr. Harry Hems, of Exeter.

Merevale.—Further progress has been made in the restoration of Merevale Church, under the direction of Mr. Alfred Bickerdike, of Adam-street, Adelphi. The east end of the South aisle has been partially rebuilt, and a fine flowing Decorated window restored and glazed with painted glass, — executed by Messrs. Burlison & Grylls,—in memory of the late Stratford Dugdale. The church is interesting, having been part of the conventual buildings in connexion with Merevale Abbey, the ruins of which stand near the church.

Ridge (Herts).—The interesting old church at Ridge, situate about two miles and a half

from London Colney, and four from Barnet, was re-opened on the 3rd inst., after restoration. The church, which dates from the thirteenth century, and is dedicated to St. Margaret, had been for some time past falling into a condition giving cause for anxiety. The cost of restoring the chancel and providing a new organ-chamber having been borne by the Countess Dowager of Caledon (in whose gift the living is), the parishioners took in hand the project of repairing the roof and the body of the church, at an estimated expense of 800*l.* The work has been carried out by Mr. C. Miskin, St. Alban's, under the direction and superintendence of Mr. Arthur Billing, architect, London. The roof and body of the church have been substantially repaired. New oak benches have been provided in the nave, and a screen erected to the tower archway. A new porch entrance has been provided on the south side of the church, and the works include an entirely new chancel arch and windows of similar character to those originally existing. The accommodation in the nave is for about 200 worshippers, and in the chancel for twenty-five.

Tottenham.—The foundation-stone of the church for the large congregation collected by the Marlborough College Mission, in a populous and newly-built artisan neighbourhood at Tottenham, is to be laid by the Duchess of Albany next Easter. The site has cost 1,899*l.*, and the church, designed by Mr. J. E. K. Cutts to hold 730 persons, will cost upwards of 3,000*l.*

Blyth.—On the 25th ult. the ancient church of St. Mary and St. Martin, Blyth, was re-opened by the Bishop of Southwell, after restoration at the hands of Mr. C. Hodgson Fowler, architect, Durham. The work is stated to have been carried out "on the most conservative lines." In the south aisle, or "parish nave and chancel," the walls, where of ashlar, have been cleaned of whitewash, and where plastered have been re-plastered, the plaster being kept thin as in the old work. The floors have been taken up and a bed of concrete laid down, with solid wood block floors for the seats, and the old gravestones and flagging relaid in the passage-ways. The fine fifteenth-century oak roof of the parish nave has been carefully repaired, bay by bay. In the parish chancel the plaster ceiling has given way to an entirely new oak roof on the same general design as that of the nave, but panelled underneath and enriched with carved bosses. The parish nave, which, before the restoration, had pews of all sorts and sizes, together with a very large west gallery, is now cleared from both and seated with oak benches, half being formed of the seventeenth-century oak pews. The chancel has yet to receive its oak choir-seats, but has been re-floored in stone and alabaster, and has a new altar. The old monastic nave and north aisle have both been carefully cleaned from colour wash, bringing to light many interesting remains of colour, and also the marks of screens, &c., all of which have been carefully preserved, no cuts, holes, or any damage to the stonework being repaired, but all left to tell their own tale. The pews and galleries with which this part of the church was disfigured have also been removed, and the stately nave is once more well seen. During the progress of the works several fragments of interest from the destroyed parts of the church have been discovered, as well as several early tombstones,—one of the thirteenth century being of Purbeck marble. The church has been heated by one of Grundy's hot-air apparatus. All the works have been carried out by the sole contractor, Mr. Thomas Woolston, of Stamford, at a cost of from about 2,500*l.* to 3,000*l.*

Newport (*Salop*).—The parish church of Newport, Salop, was re-opened on the 22nd ult. after restoration under the superintendence of Mr. Norton, the contractor for the work being Mr. Muirhead, of Newport. The structural works comprise the taking down of the north and south nave, arcades, and clearstory walls over same. The old columns were much out of the upright, and had been sadly weakened by being cut into to support the aisle galleries. Both the clearstory walls were bulged outwards to an alarming extent, and the ten couplet windows were in a ruinous condition, the weather having disintegrated the soft sandstone with which they were built. These have been rebuilt in hard red Codsall stone, as well as the battlemented parapets and pinnacles of both aisles. The columns and arches of arcades have been rebuilt, using all the old stones, and the cement capitals replaced with moulded stone. The floor of the church has been lowered some 1 ft. 6 in. to the original level, bases added to the columns, the old vaults filled in, and the entire area concreted over, the spaces under seats floored with pine blocks, and the old inscribed flag-stones relaid in the passages. The fine old oak roof over nave has been carefully preserved, repaired where decayed, re-boarded with oak, and re-covered with new lead, and the principal trusses well bolted to walls to prevent any future damage. The walls internally have been stripped of plaster, and the old facing exposed to view,—the rebuilt walls faced with coarsed sandstone. The old south aisle wall, of brick, with five circular-headed windows and a bull's-eye, has been taken down to the foundation, and rebuilt in the late Gothic style to correspond with the nave work. Five handsome traceried triplet windows, ten lofty pinnacled buttresses, a battlemented parapet, moulded plinth, and dressed red sandstone facing to the walls generally, replace the old debased wall. It is proposed, when funds admit, to treat the north aisle wall in a similar manner. The second bay of south aisle is left rough to receive a handsome porch, delayed for want of funds. The old chancel-arch, which had lost all its ancient features, has been replaced by a bold and well-moulded arch. The tower has been opened to the church by the removal of the west gallery and organ. This has brought into view the fine fourteenth-century window and the lofty tower arch. The interior of the church had been entirely blocked up with galleries in the reseating of 1837, the galleries filling the aisles, the tower and chancel necessitating the well-known three decker arrangement of pulpit, desk, and clerk. The deal pewing has been removed, the galleries swept away, the font removed to the tower. Mr. Hughes (of the firm of Hughes & Owen), Wrexham, carried out all the stonework and masonry generally. The heating is effected by Grundy's apparatus.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

5,888, Window-sashes. R. A. Lowe.

The stiles of bottom sash are in two parts,—(1) the inner, which, with the rest of the sash, is pivoted at the lower part of the window-frame; and (2) the outer, which slides in beads as usual, and is connected with sash-lines. A strip of metal, hinged to two short pieces, and acting like a parallel ruler, works in grooves in the adjacent edges of two parts of stiles forming a tight joint; or it may be completely moved into groove or inner piece, so as not to prevent rotation of sash. The upper sash is raised and lowered by cords, and a spring catch, actuated by cords, provides the fastening.

9,200, Fireproof Building. P. Franquin (Paris).

The walls are built of hollow bricks forming continuous passages for air-circulation, with the object of keeping them cool in case of fire. The iron floor-joists are enclosed in fire-clay casings, leaving air-passages between the casing and the joists. Openings are made in the roof, to be opened in case of fire in order to localise it. The doors and all other woodwork are encased in iron, and the windows are provided with iron Venetians. In theatres, the openings in the partition-walls around the stage may be provided with double curtains, composed of beams of wood encased in iron, and sliding in iron grooves coated with fire-clay.

11,276, Casting Sash-weights. W. Ayres.

The weight is cast in a chill, which has a projection on one or both halves. A plug at the end meets these projections, and together they form a hole for the cord.

11,624, Spanners and Wrenches. E. Barnes.

The lower jaw is moved up and down on a rectangular stem by means of a screw, which takes into a threaded recess upon it. The screw is partly recessed in a smooth groove in the stem, and is held in place by projecting pieces, which close over the milled head. This milled head is kept from moving longitudinally by the recesses into which it fits.

12,425, Asphalte. H. Kettmann.

The limestone is pulverised and its impurities extracted and destroyed by treating with suitable acids. The mass, after treatment, is cast or moulded into blocks.

12,466, Wood Sawing Machines. F. W. Hofmann.

The object is (in reciprocating sawing-machines) to disengage the point of the teeth from the wood during the back stroke. Guides are fitted so that they can be moved laterally to engage or disengage the saws as required.

12,599, Shovel. J. G. Dreyfus.

The blade is stamped or otherwise formed in one piece, with corrugations in the side for strength The part into which the handle fits is formed by bending.

13,148, Bridges. W. H. Lindsay.

The flooring of the bridge is constructed of pieces bent into a trough-like form. The floor is trussed by rods arranged to form parabolic girders, of which the upper members are composed of the flooring-troughs; or, the lower members of the girders may be parallel to the floor, transverse ties being provided in both cases where the inclined struts meet the floor.

14,989, Cement for Wood Pavements. R. L. Lowe.

Consists of resinous matters, grease, or fatty matters, heavy anthracene or other coal, or tar, oil, &c. Wooden blocks for paving, flooring, or the like, are dipped in the melted cement, and laid close together.

NEW APPLICATIONS FOR PATENTS.

Oct. 2.—11,734, G. Brodie and J. Prior, Safety Catches for Window-sash Fastenings.—11,751 W. Clarke, Improvements in Venetian Blinds.—11,759, O. Imray, Improvements in Water Meters.—11,762, E. Hatton, Improvements in Ventilators.—11,771, J. Knott, Machines for Dovetailing Mortising, Tenoning, Tongueing, Grooving, and Moulding.

Oct. 3.—11,790, J. Lewthwaite, Improvements in Paving and Preparation of Blocks.—11,799, W. Beck, Producing Letters or Designs in Relief or Intaglio in Marble, Stone, &c.—11,805, H. Phillips, Flushing Cisterns for Water-closets, Drains, Baths, &c.—11,806, W. Timewell, Manufacture of Cement.

Oct. 5.—11,810, J. Neild, Portland Extension Ladders.—11,811, J. Gurr, Joiner's Bench Knife for Securing Work to Bench.—11,817, W. Sanderson and T. Moffitt, Sash, Casement, Door, and other Fasteners.—11,819, W. Sanderson and T. Moffitt, Boring Tools for Wood.—11,821, M. Bousfield, Perforated Fireclay Bottom for Ranges and Stoves.—11,829, W. McGinnis, Improved Screw-threaded Nail.—11,833, W. Scott Moncrieff, Syphon Cisterns for Flushing Water-closets.—11,843, R. Baillie and L. Chapman, Improvements in Planing Machines.

Oct. 6.—11,852, W. Black, Self-acting Fire Extinguisher.—11,877, A. Clark, Nailmaking Machines.—11,890, H. Haddan, Improvements in the Treatment of Veneers.—11,901, Sir G. Chubb and G. Exton, Improvements in Latch Locks.

Oct. 7.—11,909, W. H. and B. Jones, Folding Table and Wash-hand Combined.—11,934, J. Gillespie and J. Pennycook, Apparatus for Opening or Closing Fanlights or other Glazed Frames, and securing same in any position.—11,939, S. Chandler and Others, Chimney-top or Ventilator.—11,940, H. Petty, Improved Means for Opening the Doors of Public Buildings, &c., in cases of Alarm or Panic.

Oct. 8.—11,949, J. Starling, Spindles for Knobs and other Handles.—11,953, R. Anderson, Apparatus for Ascending Chimneys.—11,974, C. Jackson, Floor-coverings and Stair Treads.

PROVISIONAL SPECIFICATIONS ACCEPTED.

9,621, J. K. Macmeikan, Chimney Tops and Ventilators.—11,128, C. Heywood, Construction of Water-closets.—11,141 J. Dickson, Chimney Tops for the Prevention of Down Draught.—9,810, J. Jeffrey, Ventilating Greenhouses and similar Structures.—10,048, M. Shirland, Securing Sliding Sashes of Windows.—10,161, E. Brinkmann, Producing Decorating Fillets.—10,332, H. Thomas, Joints of Sanitary and other Pipes.—11,114, G. Greig, Diffusing Air supplied for Ventilation.—11,133, H. Dawson, Ventilation of Street or other Drains.—11,160, W. Carr, Water-waste Preventing Cisterns.—11,282, J. Howie, Manufacture of Bricks, Tiles, and Slabs.—11,285, J. Ludlam and S. Harvey, Fire and Sound proof Flooring.—9,885, S. Emmens, Earth Boring Apparatus.—10,292, L. Groth, Fixing Ornamental Ironwork.—10,695, F. Guilleaume, Packing for Pipe and other Joints.—10,863, R. Oates, Water-waste Preventer Cistern for Water-closets.—10,960, D. Law and Others, Fasteners for Rain-water Pipes, &c., and for Pipe Heads and Connexions.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

13,388, H. Smith and D. Smith, Window Fasteners.—13,636, F. Howcroft, Automatic Sash Lock.—14,393, J. Stansfield, Manufacture of Asphalte Pavements.—15,570, A. Ward, Drainage Pavings for Stables and Cattle Stalls.—16,485, H. Lake, Improvements in Quays, Piers, Docks, and similar Structures.—16,792, G. Ross, Laying and Securing Slates.—4,738, J. Key, Getting or Mining Clay.—13,442, A. Caspar, Imitating Stained Glass.—15,976, E. Hollands, Improvements in Open Stoves or Fire Grates.—16,431, A. Myall, Improvements in Grates and Stoves.—16,862, G. Pepper, Improvements in Lavatories or Wash-hand Basins.—17,052, P. Jensen, Improvements in Thermo Ventilating Stoves, &c.—5,913, H. Waldron, Attaching Door Latch and Lock Knobs to their Spindles.—9,412, W. Macrone, Machinery for Varnishing, Sizing, and Applying Colours to Paper, &c.—9,413, W. Macrone, Improved Varnish or Size.—9,414, W. Macrone, Manufacture of Dry Colours.—10,696, R. Evered, Flushing Apparatus for Water-closets, Urinals, &c.

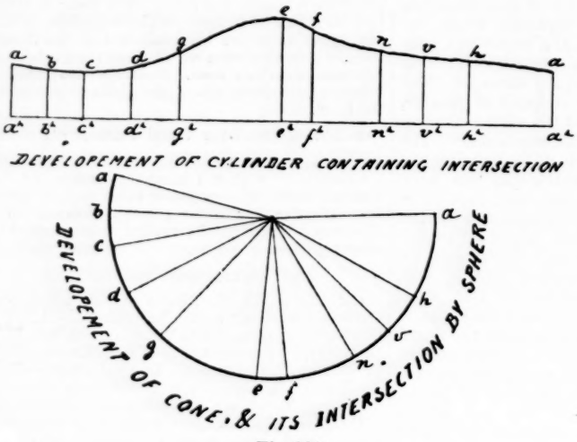


Fig. 182.

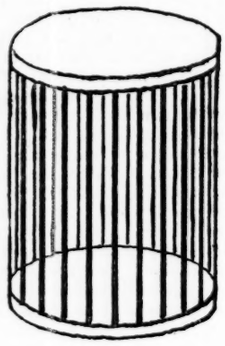


Fig. 183.

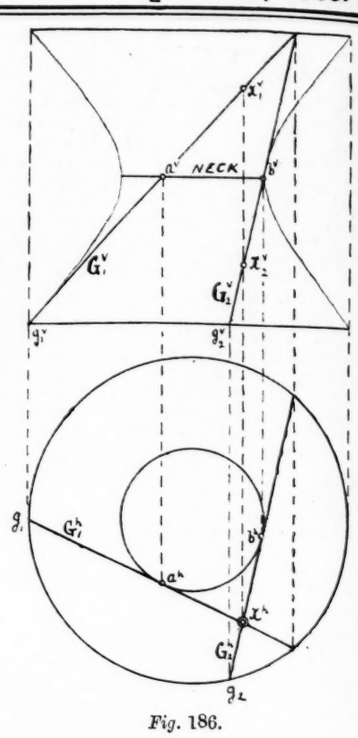


Fig. 186.

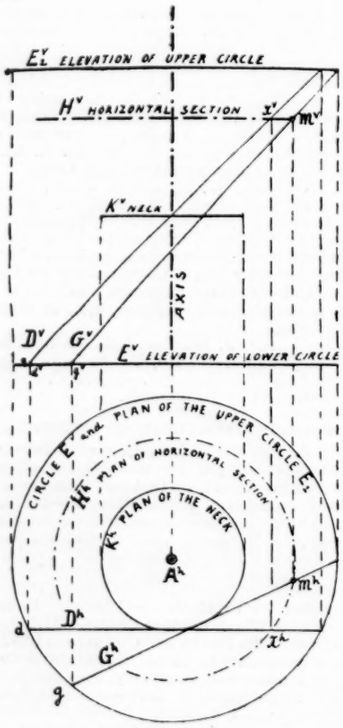


Fig. 184.

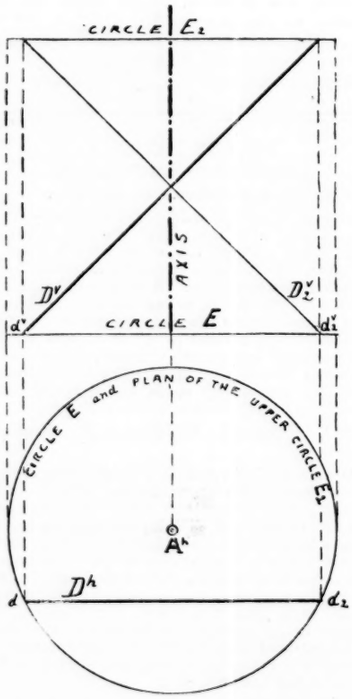


Fig. 185.

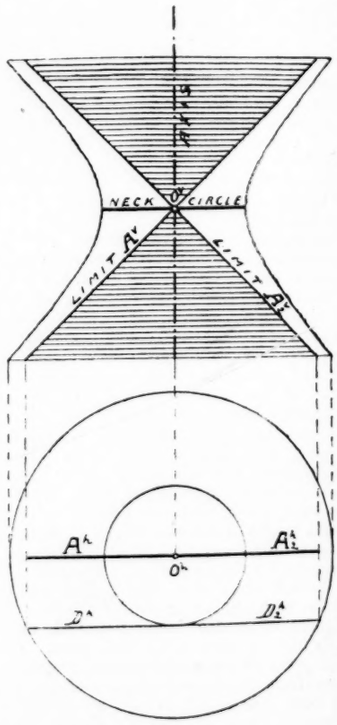


Fig. 187.

The Student's Column.

DESCRIPTIVE GEOMETRY.—Part II.

XX.

Develope any Cone (see figs. 173 and 182).

We can use the intersection of the cone by a sphere, for we know that the intersection will develope in the shape of part of a circle of the same radius as the spheres (see fig. 182). To get in the development the generators G of the cone we shall have to measure exactly on the intersection the distance of the points *m* to the generator along which the cone has been slit. We must, therefore, first develope the intersection as if it were a curve drawn on a cylinder standing over its plan, and on that auxiliary development we can measure the real distances of the points *m* to carry them on the arc of circle belonging to the development of the cone. The reader sees thereby that there is really no practical advantage in using this method of development, although it seems theoretically simple.

The Hyperboloïd of Revolution.

This is the surface described by a straight line as generator revolving round an axis not in the same plane as itself. It is called a hyperboloïd, for its meridian, or section by a plane containing the axis, is a hyberbola, and the same surface could be formed by the revolution of that hyperbola. We shall not attempt to prove this, for, although very simple, it has to be done by the application of algebra to conic sections.

The reader can obtain a hyperboloïd by the following very simple construction:—Cut out of card-board two circles of equal diameter, then connect the two discs obtained by threads, so as to form a cylinder, as in sketch (see fig. 183). If now you fix the lower disc on the table, and give a twist to the upper disc, you will have formed a hyperboloïd. This surface can be seen in the ordinary circular waste-paper basket, for it is naturally produced by the process of basket-making. The scotia or τρόχιλος of the Greek Ionic base is a hyperboloïd. With the Greeks the scotia was the essential feature of the base, probably because wicker-ware of that shape had been traditionally used as supports to vases and other objects from time immemorial; and also, because the Greeks, with their keen feeling of form, saw that the hyperboloïd of revolution expresses eminently well the elastic reactions which a base is submitted to, as transmitter of the weight of a burden to the ground. The Romans misunderstood the artistic meaning of the scotia, and saw in this feature only a means of getting a shadow, as expressed by the very name they give it. In the Roman columns the scotia plays, therefore, but a subordinate part, and was drawn by means of compasses, as formed of two arcs of circles. The hyperboloïd is the easiest of all surfaces to produce on the turning-lathe, and for this reason is often used for vases and other earthenware.

To draw the surface of the hyperboloïd (see fig. 184), first draw the generator D parallel to the elevation plane, then when D rotates round the axis A it will always touch the circle K, which we call the *neck* of the hyperboloïd. Therefore, any line G^h tangent to the circle K^h is the plan of a generator of the hyperboloïd, its foot g will be on the circle E, and its upper extremity will be on a circle E_2 placed at a certain distance above the circle E. The plane of the neck or the circle K will be at an equal distance between the planes of the circles E and E_2.

If the plan m^h of a point m belonging to the surface of the hyperboloïd be given, we find the vertical projection of the point as follows:—Draw through m^h the plan of the generator G^h, deduct G^v, and carry thereon m^v.

If, on the contrary, the elevation m^v of a point belonging to the surface of the hyperboloïd be given, we shall find m^h as follows: at the level of m^v we cut the hyperboloïd by a horizontal plane H, and its intersection x with any generator, D, is a point of the circular horizontal section. We draw the circle H^h through the point x^h, and carry on that circle m^h plan of the point m.

We see in fig. 185 that D^h is the plan of two lines D and D_2, of which the elevations D^v and $D_2{}^v$ run in contrary directions. It is evident that when lines D and D_2 revolve round the axis A they will generate the very same surface, for their extremities will describe the same circles E and E_2. We can conclude, therefore, that through every point of the hyperboloïd pass two generators opposed to one another in direction.

It follows also that any generator of the one system meets all the generators of the other system, for through any point of that generator there will pass a generator of the second system. This will be plain to any reader by examining an ordinary waste-paper basket. Of course this is only true if we consider the surface of the hyperboloïd as infinitely extended, and also the generators which are parallel as meeting at an infinite distance.

On the other hand, generators belonging to the same system never meet and are never parallel. Let us take (see fig. 186) two generators G_1 and G_2 of the same system of generation. If these generators meet in space, it will be in some point above x^h; now we shall find that a vertical line from x^h will meet the generator G_1 above the neck in $x_1{}^v$, and the generator G_2 below the neck in $x_2{}^v$. We conclude, therefore, that the generators G_1 and G_2 do not meet. It is easy to see in our figure that this will necessarily be true of any two generators we may select, for we shall always have the one generator get to x_1, after reaching the neck in the point a, whereas the other generator will get to x_2 before reaching the neck in b. If the two generators of the same system are parallel on plan, then it will be found that they are inclined in contrary directions.

If through the centre O of the neck circle (see fig. 187) we draw two lines A and A_2 parallel to the generators D and D_2 of the hyperboloïd, the lines A and A_2 will be the limits (prop. asymptotes) of the hyperbolas which form the outline of the figure in elevation. If the lines A and A_2 are made to revolve round the axis of the hyperloïd, they will generate a cone which we will call the *limiting cone* (prop. assymptotic cone) of the hyperboloïd; for the surface of the hyperboloïd and this cone will near one another infinitely without ever touching.

STAINED GLASS.

Bletsoe.—The three-light east window of the Parish Church, Bletsoe, Bedford, has just been filled with Munich stained glass representing the "Sermon on the Mount." The window is erected in memory of the Rev. the Hon. Edmund Tudor St. John, who died 30th September, 1884. The artists are Messrs. Mayer & Co.

Elstow.—The second of two memorial windows entrusted to Messrs. R. W. Winfield & Co., successors to Camm Brothers, of Cambridge-street, Birmingham, has just been fixed in Elstow Parish Church. The first illustrates "The Pilgrim's Progress," the second "The Holy War." In the centre light is represented the town of Mansoul, and on the right-hand side Immanuel with his officers and army, and on the opposite Diabolus and his chiefs and army, with banners, &c. In the tracery are indicated the officers of Immanuel's army, with their varied ensigns. The window was designed by Mr. T. W. Camm.

Swansea.—The four-light south transept window of St. James's Church, Swansea, has just been filled with Munich stained glass in memory of the late Mr. J. C. Richardson. The subjects selected are the Acts of Mercy, in recognition of his well-known charity. The work has been executed by Messrs. Mayer & Co.

Dalton-in-Furness.—A stained-glass window has been placed in the west end of Dalton Parish Church by the mineral tenants in the manor of Plain Furness, to the memory of the late Duke of Buccleuch and Queensberry, K.G. The window is by Messrs. Burlison & Grylls (who provided the east window), of Newman-street, Oxford-street. The canopy contains angels with scrolls, the tracery being filled in with glass of good design. The centre compartment has a figure of the Baptist, and beneath is a representation of the Deluge and Moses dividing the Red Sea. The right-hand compartment contains the baptism of the Ethiopian eunuch by St. Philip, and the baptism of Cornelius by St. Peter, the lowest figure being Moses, with the two tables of stone. The left hand contains the figures of St. John the Baptist and his two disciples, to whom he points out Jesus as the Lamb of God; also the figures of St. Paul and St. Barnabas baptising Lydia and her family, the lowest figure being that of Noah with scroll.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

OCT. 3.

By J. G. ROBINSON & SON.

Saffron Walden—Freehold house and nursery-grounds, 1a. 3r. 6p.	£750

OCT. 5.

By WAGSTAFF & WARMAN.

Barnsbury—125, 195, and 197, Liverpool-road, 14 years, ground-rent 20*l.* 6s.	675
7, 8, and 10, Stonefield-terrace, 20 years, ground-rent 18*l.* 14s.	930
10, Cloudesley-square, 16 years, ground-rent 7*l.*	220

OCT. 6.

By C. & H. WHITE.

Walworth—113, Lorrimore-road, 68 years, ground-rent 6*l.*	375
Kennington—102, Upper Kennington-lane, freehold	760

By H. C. NEWSOM.

Lambeth—134, Belvedere-road, and 24, Tennison-street, 38 years, ground-rent 10*l.*	650
25 and 26, Tennison-street, 38 years, ground-rent 14*l.*	915

By H. W. SAFFELL.

Southend—A plot of copyhold land	200

By DRIVER & CO.

Kew Green—The residence known as "Beaconsfield House"	1,200
Soho—5, Rupert-street, freehold	2,075
Sussex, near Pulborough—Freehold woodland, 8a. 1r. 2p.	220
The reversion to a moiety of 2,910*l.*, life aged 73 years	675

By SALTER, REX, & CO.

Chalk Farm—10, 12, 15, and 17, Hartland-road, 45 years, ground-rent 17*l.*	905
Camden Town—225 and 227, Arlington-road, 27 years, ground-rent, 10*l.*	335
Haverstock Hill—28 and 29, Duke's-terrace 64 years, ground-rent 12*l.*	590

By Messrs. WILLMOTT.

Uxbridge-road—5, Blomfield-road, 80 years, ground-rent 8*l.*	505

OCT. 7.

By T. G. WHARTON & SHERRIN.

Wimbledon—13, Spencer-hill, 94 years, ground-rent 20*l.*	750
Finchley—1 and 2, Leicester-villas, 99 years, ground-rent 5*l.* 10s.	250

By HOBSON, RICHARDS, & CO.

Battersea—25 to 29, Francis-street, 66 years, ground-rent 16*l.*	595
Brixton—36, 38, and 40, Poplar-walk-road, 80 years, ground-rent 15*l.*	750
20, Poplar-walk-road, 80 years, ground-rent 4*l.* 10s.	250

By A. & A. FIELD.

Hackney, Amhurst-road—"Grantham House," 73 years, ground-rent 13*l.*	1,530
Spitalfields—17, Princes-street, freehold	1,430
Southend—11, High-street, freehold	1,090
Whitechapel, 64, Great Garden-street, freehold	760
Mile End-road—5, Moody-street, freehold	350
Southend, Cliff Parade—"Oakleigh House," freehold	2,100
Homerton—4 and 5, Berger-road, freehold	455

By BAXTER, PAYNE, & LEPPER.

Bromley, Kent—"Somerton Lodge," and a plot of land, freehold	1,500
Knockholt—Twenty-five plots of freehold land	1,076

OCT. 8.

By E. STIMSON.

Bermondsey—38 to 38, Ernest-street, 32 years, ground-rent 11*l.* 8s.	845
1 to 9, Nelson-street, and 15 and 16, West-street, 72 years, ground-rent 94*l.*	1,400
17 to 23 and 30 to 36, West-street, 72 years, ground-rent 72*l.*	1,005
26 and 27 and 30 to 35, Nelson-street, and 1 to 11, Edmund-place, 72 years, ground-rent 89*l.*	1,550
Lower Sydenham—15 to 20, Paxton-villas, freehold	1,600
Holborn—16, Leather-lane, freehold	1,060
Oxford-street—13, Great Chapel-street, freehold	550
Brunswick-square—33 and 35, Colonnade, 7 years, ground-rent 10*l.* 10s.	105
West Dulwich—18 and 20, Chancellor-road, freehold	£600
Lower Norwood—25, High-street, 80 years, ground-rent 6*l.*	300

By A. WATSON.

Bermondsey—9 to 13, Melior-street, freehold	855
18, 19, and 33, Kinross-street, 23 years, ground-rent 8*l.* 13s.	280
Walworth—80 and 82, Kinglake-street, and 9, Bagshot-street, 22 years, ground-rent, 7*l.* 17s. 6d. and a ground-rent of 4*l.* 10s., term 22 years	345

By C. C. & T. MOORE.

Bethnal Green—241, Globe-road, 59 years, ground-rent 2*l.*	300
Bow—12, Malmesbury-road, 87 years, ground-rent 4*l.*	345
Commercial-road—No. 475, and 5, Bermuda-street, 7 years, ground-rent 50*l.*	45
45, Perth-street, 7 years, ground-rent 6*l.*	45

By F. HARDS.

Lee—38, 30, and 42, Boone-street, freehold	1,095
East Greenwich—28, Calvert-road, freehold	295
Woolwich-road—A plot of freehold land	220

MEETINGS.

SATURDAY, OCTOBER 17.

Association of Municipal and Sanitary Engineers.—Home Counties District Meeting at Bournemouth. 11 a.m.

WEDNESDAY, OCTOBER 21.

Builders' Foremen and Clerks of Works Institution.—Quarterly Meeting of Members. 8·30 p.m.

FRIDAY, OCTOBER 23.

Architectural Association.—Mr. C. R. Pink, President, will deliver his opening Address. 7·30 p.m.

University College.—Professor C. T. Newton on "Greek Inscriptions," II. 4 p.m.

Miscellanea.

Technical Education in Manchester.—The thirtieth session of the Manchester Association of Employers, Foremen, and Draughtsmen was opened at the Technical School, Princess-street, on Saturday evening last, with an address by Mr. William Mather, C.E., of Salford, on "The relation of technical instruction to the progress of engineering and kindred trades in the future." Mr. W. H. Bailey, President of the Association, occupied the chair, and, in the course of his remarks he said that although technical education was now taking a prominent place, this Association had for over a quarter of a century been providing such education to members at its own expense. Mr. Mather said the subject of his address had not received the attention it deserved in England. How was it we were still talking about holding our own, about still keeping the lead, when a few years ago we were not conscious of competitors, and scarcely condescended to notice the changes that were reducing the distance between us and those who entered the field long afterwards, heavily handicapped by many disadvantages? He was aware that there was a "Jingoism" in the mechanical and engineering trades just as well as in politics, but we were bound to admit that our neighbours were greatly superior to us in technical knowledge, in order to account for the inequality that now existed. He firmly believed that a larger interest on the part of employers and the middle classes generally was all we needed in this country, in order to develope more rapidly the necessary changes required in our elementary schools. We required more ample provision for secondary education in which sciences should have the most prominent place, leading up to high-class technical schools, each having its special character and purpose.

Inland Navigation. — At the ordinary monthly meeting of the Council of the Railway and Canal Traders' Association, held at the Offices, Eastcheap-buildings, E.C., on the 7th inst., the necessity of improving our inland navigation and the vital importance of cheaper transit to the Midland districts were considered, when it was resolved:—That a letter be written to the Corporation of Peterborough urging the necessity of improving the River Nene navigation to that town, apart from the necessity of preventing the flooding of the Fenlands; and, that a similar letter be sent to the Severn Commissioners urging that the proposed deepening of the latter navigation (at very small cost) between Gloucester, Worcester, and Stourport be proceeded with; and further, that a memorial be sent to the Royal Commissioners appointed to inquire into the Depression in Trade, expressing the opinion of this Council that trade in England is most unfavourably affected by the inadequate and restricted condition of our inland navigations.

Registering Turnstiles.—Messrs. Isler & Co. have secured the contract from the Australian Government for their improved patent registering turnstiles, for the race-courses.

Leeds and Yorkshire Architectural Society.—The opening address in connexion with the Leeds Architectural Society was given on Monday evening by the President (Mr. J. W. Connon, F.R.I.B.A.). He said that in meeting again for the commencement of another year's work, and for a comparison of the past year's experience, they found little upon which they could congratulate themselves in the condition of the trades upon whose prosperity their profession depended. Building operations had been of an unimportant character and limited in number, providing mostly only for immediate needs, seldom for future wants. The quiescent condition of the building industries for the past few years left little to be recorded concerning new erections in Leeds. The following prizes were presented during the evening:—1. A silver medal, given annually by the society, and 5*l.* 5s. by the President, was awarded to Joseph Rhodes for the best set of drawings illustrating Skelton Church; and a similar medal in bronze to Joseph Hall, for drawings of the same subject. 2. A prize of 3*l.* 3s., awarded to Charles Barker Howdill, for the best drawings illustrating roof construction. 3. A prize of 2*l.* 2s. for a design for a monument to a statesman, and a prize of 2*l.* 2s. for a set of drawings at the evening class of design. These two prizes were awarded to Fred. Mitchell. 4. A prize of 1*l.* 1s., given by Major R. W. Moore, was awarded to Francis William Bedford, for the best set of drawings done by an Associate of the Society at any Art School in the town. 5. A prize of 2*l.* 2s., offered by Mr. J. W. Connon, for the best work done by members of the Associates' Sketching Club, was awarded to Alfred Whitehead.

The Strand Ratepayers and their Assessments.—A public meeting of the ratepayers of the parish of St. Martin's-in-the-Fields, in the Strand Union, was held on Tuesday afternoon, at Exeter Hall, for the purpose of protesting against the recent heavy increase in their rating. Mr. E. J. Watherston occupied the chair. Mr. Robert Walker, architect and surveyor, moved the following resolution:—"This meeting protests against the action of the Assessment Committee in issuing nearly nine hundred fresh notices of largely-increased assessments, after the assessment appeals on the list prepared by the overseers have been heard and settled, and after the time fixed by law for the revision of the Valuation List, and calls upon them to withdraw such notices, there being no substantial grounds for the increase, as the value of property has lately decreased in the parish, on account of the continued depression in trade and the incomplete state of the new streets now being slowly carried out at Charing-cross." This and other resolutions were agreed to.

The Proposed Tower Bridge.—At the last meeting of the Court of Common Council, Mr. T. Beard, Chairman of the Bridge House Estates Committee, had secured a place on the agenda for a report, recommending that Mr. Horace Jones, City Architect, should be appointed the architect for the erection and construction of the Tower Bridge; that Mr. J. Wolfe Barry, civil engineer, should be associated with him in carrying out the work; and that the sum of 30,000*l.* should be paid to them, in such proportions as they might mutually agree upon, for their services in respect thereof, such sum to include the salaries and expenses of all superintendents and clerks of works. Mr. Beard was anxious that consideration of the report should be proceeded with, but the majority of the Court held that the matter was of such importance that the report should be printed and considered at the next meeting.

Temple Bar.—We are glad to see that at the last meeting of the Common Council the absurd proposal of the City Lands Committee to re-erect Temple Bar as an entrance to the Albert Palace at Battersea was withdrawn. In the course of the discussion, Mr. H. H. Bridgman named the Embankment end of Middle Temple-lane as a suitable site, and Major Joseph expressed the hope that the remains of the Bar would not be taken outside the City.

Technical Education.—The preliminary lecture of a course on science of construction was delivered gratis at Exeter Hall on the 9th inst. by Mr. T. G. Gribble, A.-M.I.C.E., of the Metropolitan Board of Works. The lecture was well attended. The course itself commences this Friday, October 16th. Particulars may be obtained from the Secretary, Exeter Hall.

The American Forestry Congress.—The proceedings at the meeting of the American Forestry Congress, at Boston, on the 22nd of last month, show that the Americans are fully alive to the importance of husbanding the splendid supply of timber still at the disposal of the United States. The invitation to the meeting stated that the natural source of a yearly product of $700,000,000, which the American forests at present represent, deserves careful husbanding with the view to its continuity, and calls for due consideration of its interests by the Legislature as well as by the people at large. Without indulging in the cries of alarmists, the conveners of the Congress have good reasons and sufficient data for asserting that the present policy, if continued, must seriously affect this factor of wealth at no distant time. They are equally justified in stating that, in view of the far-reaching influences exerted by the forests, wastefulness in the methods of lumbering and reckless destruction by fires have become criminal. The American Government has therefore been requested to pursue a wise and conservative policy in regard to its own forest lands, consisting still, at the present time, of 85,000,000 acres. The questions which have been discussed by the Congress,—including the importance of forests in climatic and hydraulic respects; the duties and rights of the State to protect its forest resources; the causes of forest fires, and the way to restrict them; education and research in forestry matters; practical forestry,—all prove that its work was thoroughly practical, and may lead to some good results.—*Iron.*

Belgian Rolled Iron Girders.—"A Looker On," in a letter to the editor of the *Liverpool Courier*, asks whose fault it is that at the present day it should be necessary to go to Belgium for this particular kind of manufactured iron. He answers the question thus:—"In my opinion the blame must be divided between our ironmasters and their workmen. The former have shown a lamentable want of skill and enterprise in failing to provide themselves with improved machinery and plant to meet the requirements of the day, and have allowed their competitors in Belgium to outstrip them in the production and manipulation of novel forms of rolled iron. Twenty-three years ago I warned them publicly through the *Times* that it was high time they roused themselves from their apathy, but to very little purpose, if it be true, as you state, that Belgian girders can still be delivered into the heart of England at a cheaper price than British rolling mills are willing to accept. Then, as to the workmen, it is within my own knowledge in former years that whenever the masters desired to introduce any improvements, or to vary the old routine in any way, they were met by the greatest obstruction and claims made for 'extra' wages, compelling the masters to increase the price beyond all reason. In Belgium and France it is just the reverse; and hence, by our own pig-headedness, we have been stimulating the manufactures of our continental rivals."

Insanitary Condition of a School-keeper's House.—At the last meeting of the Shoreditch Vestry, Mr. Hugh Alexander, the Chief Sanitary Inspector, presented a report describing the insanitary condition of a house belonging to the School Board for London, and occupied by the caretaker of the Hammond-square Board School. It seems that the house was built some eight or nine years ago on the site of some old cottages and their water-closets, and over an old drain which was not removed. There had been much sickness in the house, and one child had died of typhoid fever. The Vestry resolved to make an order on the School Board to completely overhaul the basement of the house.

The Josiah Mason College, Birmingham. Messrs. J. L. Bacon & Co. request permission to state that the allusion to the defective result of the heating of the Josiah Mason College, in our report of the lecture of Mr. E. C. Robins, F.S.A., on p. 458, *ante*, is, by the context, calculated to lead to the impression that the work was done by their firm, whereas such was not the case.

District Surveyorship.—Mr. A. O. Collard, who has been for some time in Mr. Vulliamy's department at the Board of Works, and was formerly a pupil of Mr. Blashill, is a candidate for the office of Surveyor to the parishes of Lee and Kidbrook, which is in the hands of the Plumstead District Board of Works.

Royal Cornwall Polytechnic Society's Exhibition.—At this exhibition, lately opened at Falmouth, Mr. Harry Hems, of Exeter, exhibited some 300 photographs of work he has carried out from time to time during the past three years. Conspicuous amongst these was an interesting series of life-size statues which Mr. Hems is commissioned to execute for St. Alban's Abbey. Others illustrated some of the work at the new church of St. Peter the Fisherman, which Lord Revelstoke has recently built in the village from which he takes his title. Besides the photographs, Mr. Hems exhibited a font cover of English oak, particularly noticeable for the ornateness of the hammered ironwork upon it. The cover is intended for the church of the Holy Cross at Newton Ferrers, now under restoration from the designs of Mr. G. H. Fellowes-Prynne, A.R.I.B.A., of London. Mr. Hems has been awarded (for the third time) the silver medal of the Society.

Sanitary Assurance Association.—At the monthly meeting of the Council of this Association on Monday last, Sir Joseph Fayrer, K.C.S.I., F.R.S., in the chair, it was resolved, on the motion of Mr. Mark H. Judge, A.R.I.B.A., seconded by Mr. Andrew Stirling, to arrange for another series of free lectures on sanitary subjects during the coming winter. Professor Roger Smith, F.R.I.B.A., will deliver one of the series.

Bromley.—The Bromley Local Board, at their meeting on the 13th inst., unanimously resolved to make an addition of 50*l.* per annum to the salary of their Surveyor, Mr. Hugh S. Cregeen.

PRICES CURRENT OF MATERIALS.

	£. s. d.	£. s. d.
TIMBER.		
Greenheart, B.G. ....ton	6 10 0	7 10 0
Teak, E.I. ....load	12 10 0	15 10 0
Sequoia, U.S. ....ft. cube	0 2 6	0 2 9
Ash, Canada ....load	3 0 0	5 0 0
Birch ,, ...	3 0 0	4 10 0
Elm ,, ...	3 10 0	5 0 0
Fir, Dantsic, &c.	1 10 0	4 10 0
Oak ,, ...	3 0 0	5 0 0
Canada	6 0 0	7 0 0
Pine ,, red	3 0 0	4 0 0
,, yellow	3 15 0	5 5 0
Lath, Dantsic ....fathom	5 0 0	6 0 0
St. Petersburg	5 0 0	7 0 0
Wainscot, Riga....log	3 0 0	4 10 0
Deals, Finland, 2nd and 1st...std. 100	8 0 0	9 0 0
,, 4th and 3rd	6 10 0	7 10 0
Riga	7 0 0	8 10 0
St. Petersburg, 1st yel.	10 0 0	17 0 0
,, 2nd ,, ...	8 0 0	9 15 0
,, white	8 10 0	11 0 0
Swedish....	7 0 0	17 0 0
White Sea	8 10 0	19 0 0
Canada, Pine 1st	18 0 0	32 10 0
,, 2nd	12 0 0	18 10 0
,, 3rd, &c.	7 0 0	10 10 0
,, Spruce 1st	9 0 0	12 0 0
,, 3rd and 2nd	6 10 0	8 0 0
New Brunswick, &c....	5 0 0	7 10 0
Battens, all kinds	4 0 0	13 0 0
Flooring Boards, sq. 1 in.—Prepared, first	0 9 0	0 13 0
Second	0 7 6	0 8 6
Other qualities	0 5 0	0 7 0
Cedar, Cuba....foot	0 0 3½	0 0 4
Honduras, &c.	0 0 3	0 0 4
Australian	0 0 3	0 0 3½
Mahogany, Cuba	0 0 5	0 0 7½
St. Domingo cargo av.	0 0 5½	0 0 7½
Mexican ,, ...	0 0 4	0 0 5
Tobasco ,, ...	0 0 4	0 0 6½
Honduras ,, ...	0 0 4½	0 0 6½
Rose, Rio ....ton	7 0 0	17 0 0
Bahia....	6 0 0	15 0 0
Satin, St. Domingo .... ft.	0 0 8	0 1 0
Porto Rico	0 0 8	0 1 3
Walnut, Italian	0 0 4	0 0 5
METALS.		
IRON—Pig in Scotland ....ton	2 2 6	0 0 0
Bar, Welsh, in London....	4 15 0	5 2 6
,, in Wales	4 7 6	4 12 6
,, Staffordshire, London	6 0 0	7 0 0
Sheets, single, in London....	7 10 0	9 0 0
Hoops ,, ...	6 10 0	7 10 0
Nail-rods ,, ...	6 0 0	7 0 0
COPPER—		
British, cke. and ingt. ....ton	43 10 0	44 10 0
Best selected	45 0 0	46 0 0
Sheets, strong....	52 0 0	0 0 0
,, India	0 0 0	0 0 0
Australian, fine cash....	0 0 0	0 0 0
Chili, bars ,, ...	39 7 6	40 0 0
YELLOW METAL....lb.	0 0 4½	0 0 4¾
LEAD—Pig, Spanish	11 5 0	0 0 0
English, com. brands	11 10 0	0 0 0
SPELTER—		
Silesian, special ....ton	14 7 6	14 10 0
Ordinary brands	14 2 6	14 5 0
TIN—		
Straits	91 10 0	92 0 0
Australian	90 10 0	91 0 0
English ingots....	93 0 0	0 0 0
TINPLATES—		
IC coke ....box	14 6 0	16 6 0
IX ditto	21 0 0	25 0 0
IC charcoal	17 0 0	20 0 0
IX ditto	26 0 0	27 0 0

OILS.	£.	s.	d.	£.	s.	d.
Linseed ....ton	23	10	0	24	0	0
Cocoanut, Cochin	31	0	0	32	0	0
Ceylon	27	15	0	28	0	0
Copra	26	10	0	0	0	0
Palm, Lagos	30	0	0	0	0	0
Palm-nut Kernel	26	6	0	0	0	0
Rapeseed, English pale	25	15	0	0	0	0
„ brown	23	5	0	0	0	0

OILS (*continued*).	£.	s.	d.	£.	s.	d.
Cottonseed, refined	21	5	0	23	0	0
Tallow and Oleine	25	0	0	45	0	0
Lubricating, U.S.	7	0	0	10	0	0
„ Refined	8	0	0	15	0	0
TURPENTINE—						
American, in cks. ....cwt.	1	6	6	1	6	9
TAR—Stockholm ....brl.	0	19	6	1	0	0
Archangel	0	11	6	0	12	0

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Sewerage Scheme	Walton-le-Dale Lcl. Bd.	50*l.* and 30*l.*	Jan. 31st	ii.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
New Steam Flour-Mill, Warehouse, &c.	The Proprietors, Silloth	J. Taylor Scott	October 20th	ii.
Well-Boring	Tottenham Local Board	— De Pape	do.	ii.
River Walling, Receiving House, &c.	Met. Asylums Board ...	J. W. Peggs	October 26th	xiv.
Baptist Chapel, Workington	...	Banks & Townsend	do.	ii.
Lamp Columns, Steam Roller, &c.	Willesden Local Board	O. Claude Robson	October 27th	ii.
Goods Shed and Offices, Carmarthen	Great Western Ry. Co.	*Official*	do.	ii.
Concrete Sea-Wall and Promenade	Hartlepool Corporation	H. Mair	October 28th	ii.
Surface Drainage Works	Richmnd (Surrey) U.S.A.	W. Brooke	October 29th	xiv.
Storage Reservoir	Cardiff Corporation	J. A. B. Williams	do.	ii.
Wrought-Iron Railing and Stonework	Vestry St. Mary, Islingtn	*Official*	October 31st	xiv.
Sewerage Works	Exmouth Local Board	E. Cousins & Son	do.	ii.
Removing Step Approaches & Erecting others	Paddington Vestry	*Official*	Nov. 2nd	xiv.
New Post-Office, Windsor	Com. of H.M. Works...	do.	do.	ii.
Widening Railway and Re-modelling Station	Glasgow and Paisley Joint Railway	do.	Nov. 3rd	ii.
Sludge Buildings and other Works	Brentford Local Board	— Lacey	do.	ii.
Embankment, Strood	Rochester Corporation	W. Banks	do.	ii.
Repairs to Streets	Acton Local Board	C. N. Lailey	do.	ii.
Pipes for Waterworks	Northwich Local Board	H. Bancroft	Nov. 7th	ii.
Aqueduct, Thirlmere	Manchester Corporatn ...	G. H. Hill	Nov. 17th	ii.
Erection of Villa Residence		J. H. Hillam	Not stated	xiv.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Accountant Clerk	Civil Service Com.	Not stated	October 30th	xviii.

TENDERS.

BARMOUTH.—For additions and alterations to Bryn Mynach, the residence of Mr. J. A. McInnes. Mr. Thos. Roberts, architect:—

Jones, Dolgelley	£4,467 19 6
Jones & Thomas, Barmouth	3,260 0 0
Lloyd & Jones, Portmadoc	2,910 0 0
Jones & Humphreys, Portmadoc	2,835 0 0
Hughes, Portmadoc	2,827 0 0
Roberts, Barmouth	2,790 0 0
Morgan, Lowyn	2,587 10 0
Jones, Criccieth (accepted)	2,580 6 5

[Architect's estimate, 2,590*l.* 11s.]

BERMONDSEY.—For the rebuilding of glue and size works, Spa-road Bermondsey, for Messrs. B. Young & Co. Messrs. Wheeler & Hollands, architects, Lonsdale-chambers, Chancery-lane. Quantities by Messrs. Evans & Deacon, Adelaide-street, Charing-cross—

		Weeks.
Atherton & Latta	£5,950 0 0	26
Kennard Bros.	6,875 0 0	—
H. & E. Lea	6,685 0 0	18
Hill Bros.	6,667 0 0	20
W. & H. Castle	6,670 0 0	30
Colls & Sons	6,580 0 0	14
J. Smith & Sons	6,446 0 0	16
B. Wells	6,420 0 0	23
A. M. Deacon & Co	6,375 0 0	18
Jervis Smith	6,298 0 0	14
S. Jerrard	6,249 0 0	22
J. & J. Greenwood	6,224 0 0	12
Chafen	6,148 0 0	17
Kilby & Gayford	6,064 0 0	18
Martin, Wells, & Co.	5,823 0 0	16

CHATHAM.—For new music-hall, tavern, and premises, High-street, for the trustees of Watts's Charity. Mr. James W. Nash, architect, Rochester. Quantities by the architect:—

G. Gates	£4,955 0 0
W. Ruby	4,745 0 0
R. West	4,720 0 0
R. G. Sampson	4,650 0 0
T. Callund & Son	4,590 0 0
C. E. Skinner	4,520 0 0
J. G. Naylar & Son (accepted)	4,488 0 0

CROYDON.—For alterations to the Gun Tavern, Church-street, Croydon, for Mr. C. Beaumont. Mr. H. J. Newton, architect, Queen Anne's-gate, Westminster:—

Walker	£888 0 0
Canning & Mullins	825 0 0
Lamble	810 0 0
Burman & Sons	797 0 0
Page	790 0 0
Waller, 35, Church-street, Croydon*	768 0 0
Pewterers' Work.	
Davidson	105 10 0
Helling	90 10 0
Sanders & Sons	89 15 0
Heath*	87 10 0

* Accepted.

DEPTFORD.—For the erection of boiler-house, engine-house, chimney-shaft, stables, and other works, at Sun Wharf, Deptford, for the Val de Travers Asphalte Paving Company, Limited. Mr. A. J. Bolton, surveyor:—

Sargeant	£3,978 0 0
Killingback	3,695 0 0
Mowlem & Co.	3,373 0 0
Perry & Co.	3,290 0 0
Wall Bros.	3,100 0 0
C. Wall	3,070 0 0
S. J. Jerrard	3,049 0 0
H. L. Holloway	2,963 0 0
W. Downes	2,880 0 0

DEPTFORD.—For erecting new additions and alterations to the Congregational Church, High-street, Deptford. Mr. Henry Cowell Boyes, architect. Quantities by Mr. L. C. Riddett, Bedford-row:—

H. L. Holloway (reduced estimate)*	£1,072 0 0

* Accepted.

GOSFORTH (Northumberland).—For detached villa residence at Gosforth, Northumberland, for Mr. John Morrison. Mr. Benjamin F. Simpson, architect, Jesmond, Newcastle-on-Tyne. Quantities by the architect:—

J. Elliot, North Shields	£1,450 0 0
J. R. Miller, Newcastle	1,440 0 0
Middlemas Bros., Newcastle	1,380 0 0
J. R. Lunn, Newcastle	1,376 4 7
T. White, Walker-on-Tyne	1,301 1 3
W. Richardson, Gateshead-on-Tyne*	1,266 0 0
Haswell & Waugh, Gateshead-on-Tyne	1,241 5 3

* Accepted.

HORNSEY.—For new boundary-wall adjoining pumping station, Burghley-road, Hornsey, for the Hornsey Local Board. Mr. T. de Courcy Meade, engineer and surveyor:—

Barber, Highgate	£135 0 0!
Crisp, Fortis Green	135 0 0
Kerry, Highgate	131 0 0
Southcott, Highgate	128 0 0
Garrett & Tillbrook Crouch-End	125 0 0
Marks, Crouch-End	123 0 0
Mattock, Finsbury Park	119 0 0
Dixon, Highgate	85 0 0
Trott, Hornsey	73 0 0
Dunmore, Crouch-End	71 0 0
Cowley, Crouch-End (accepted)	69 0 0!

HORNSEY.—For the erection of about 1,500 ft. of close deal fencing, 5 ft. 6 in. high, &c. Priory-road, Hornsey, for the Hornsey Local Board. Mr. T. de Courcy Meade, engineer and surveyor:—

	Per Rod.
Kerry & Son, Highgate	£1 13 0!
G. Crisp, Fortis Green	1 6 0
Gasson & Son, Forest Hill	1 5 0
Moreland & Son, Hornsey	1 5 0
Garrett & Tillbrook, Crouch-End	1 4 6
Marks, Crouch-End	1 2 9
Trott, Hornsey (accepted)	0 16 6!

HULL.—For the erection of a Board school in South Parade, Hull, for the Kingston-upon-Hull School Board. Mr. William Botterill, architect to the Board, Parliament-street, Hull. Quantities by the architect:—

J. Drury	£6,661 0 0
R. Sergeant	6,522 0 0
J. T. Skinner	6,380 0 0
Darneley & Son	6,307 0 0
Dalby & Son	6,289 0 0
J. Ward	6,241 0 0
J. F. Freeman	6,199 16 2
W. Lison	6,194 8 0
Hockney & Liggins	6,125 0 0
B. Musgrave	6,096 0 0
F. Beilby	6,086 0 0
M. Harper	6,027 10 0
G. W. Stephenson	5,946 11 6
Executors of T. Southern	5,932 10 0
Jackson & Son (accepted)	5,900 0 0

KENSINGTON.—For alterations to 95 and 97, High-street, for Messrs. J. Barker & Co. Mr. Alexander Peebles, architect. Quantities by Mr. W. Stonor:—

C. F. Kearley (accepted)	£3,099 0 0

LIMPSFIELD (Surrey).—For the erection of Children's Home at Limpsfield, Surrey, for the Church Missionary Society. Mr. John Norton, architect:—

	General.	Hospital.
F. & F. J. Weod	£32,600 0 0	£1,683 0 0
Dove Bros.	31,885 0 0	1,770 0 0
Holland & Hannen	30,976 0 0	1,790 0 0
Boyce	30,872 0 0	1,867 0 0
A. & C. Braid	29,500 0 0	1,600 0 0
Lawrence & Son	29,086 0 0	1,645 0 0

LIVERPOOL.—For the completion of Lesseps-road, Toxteth Park, Liverpool, for the Toxteth Park Local Board. Mr. John Price, engineer. Quantities by the engineer:—

Vaughan, Manchester	£213 0 0
Wm. Standing, Garston	208 1 8
Birley & Co., Liverpool	202 17 8
G. Unsworth, Manchester	186 16 0
Chadwick & Co., Liverpool	182 3 4
L. Marr, Liverpool	172 1 0
E. Catterall, Liverpool	171 1 0
S. McCullagh, Liverpool	167 14 0
J. McCabe & Co., Liverpool	150 0 0
P. Walkden & Co., Liverpool*	150 0 0

[Engineer's estimate, 180*l.*]

* Accepted.

LONDON.—For the Innholders' Hall, College-street, E.C. Mr. J. Douglass Mathews, architect, Dowgate-hill. Quantities by Mr. John S. Quilter, Brunswick-square:—

E. Conder	£4,443 0 0
Grover & Sons	4,288 0 0
Nightingale	4,285 0 0
Dove Bros.	4,275 0 0
Lidstone & Sons	4,190 0 0
Ashby & Horner	4,100 0 0
Colls & Son	3,945 0 0
Wontner Smith & Son	3,600 0 0
Brass & Sons	3,573 0 0

LONDON.—For new wing and alterations to Queen Charlotte's Lying-inn Hospital, Marylebone-road. Mr. F. W. Hunt, architect. Upper Baker-street. Quantities by Messrs. Vinall & Kennedy, Guilford-street, Russell-square:—

Haylock	£4,305 0 0
Brass & Son	4,149 0 0
Lathey Bros.	3,970 0 0
W. Downs	3,947 0 0
Bywaters	3,936 0 0
Nightingale	3,887 0 0

LONDON.—For sanitary arrangements and improvements at No. 20, Lowndes-square, for the Right Hon. Viscount Newport. Mr. Mark H. Judge, architect, Park-villas, W.:—

Bertram & Son (accepted)	£216 4 0

LONDON.—For the completion of two shops in the Gray's Inn-road, for Mr. Hollington. Mr. A. W. Crawley, architect:—

Spencer & Co.	£950 0 0
H. L. Holloway	919 0 0
Wyard	717 0 0

LONDON.—For alterations and fittings at the Blue Posts Tavern, 2, Great Portland-street, for Mr. J. T. Smith:—

Williams & Son	£447 0 0
Steel Bros.	385 0 0
Hanley	373 0 0
Chas. Gould	335 0 0
Sterling	319 15 0
Chas. Jeffreys, Hatton-garden*	236 18 9

* Accepted.

NEW BROMPTON (Kent).—For the erection of the Printing-room and Assembly-room floors of "the Temple of the New and Latter House of Israel." Messrs. Margetts, Son, & Co., architects, Chatham, Kent. Quantities by the architects:—

	Contract No. 1. Building.	Contract No. 2. Ironwork.
Jones & Son, Gloucester	£3,689 0 0	£2,228 0 0
Heaven, Rochester	3,350 0 0	2,600 0 0
Hocking & Tuttlebee, Gravesend and Strood	3,345 0 0	2,437 0 0
Whielden, Bishopsgate	3,275 0 0	2,595 0 0
Seager, Sittingbourne	3,199 0 0	2,284 0 0
Sampson, Chatham	3,151 0 0	—
Bathurst, Chatham	3,058 0 0	—
Nye Bros., Chatham	2,998 0 0	—
Naylar & Son, Rochester (accepted)	2,997 0 0	2,353 0 0
Linay, Chatham	—	2,306 0 0

[Architect's estimates, 2,990*l.*, and 2,446]

NEW CROSS.—For erecting billiard-room and additions to Fairlawn, New Cross-road, for Col. Kirby. Mr. J. B. Wall, architect:—

M. Redman	£405 0 0
H. L. Holloway (accepted)	397 0 0

NEWPORT (Mon.).—For the erection of two houses, Merchant, for Mr. H. E. Prosser. Mr. Geo. Rosser, architect:—

J. Williams, Victoria-avenue, Maindee, Newport, Mon. (accepted)	£460 0 0

NORFOLK.—For new wing and offices, &c., Pinkney Hall, Norfolk. Mr. Ewan Christian, architect, Whitehall-place. Quantities by Messrs. Vinall & Kennedy:—

Bardell	£4,472 5 0
Chapman	4,335 0 0
Cornish & Gaymer	4,323 0 0

PECKHAM.—For erecting new mortuary in St. George's Churchyard, St. George's-road Peckham, for the Vestry of Camberwell. Mr. J. C. Reynolds, surveyor:—

H. L. Holloway (reduced estimate)*	£792 0 0

* Accepted.

PORTSMOUTH.—For the erection of a sanatorium at the Portsmouth Lunatic Asylum (exclusive of heating apparatus), for the Corporation of the borough of Portsmouth. Mr. James W. Stroud, architect, Southsea. Quantities supplied by Mr. George Rake, Portsea:—

T. Roberts	£2,302 3 3
W. Ward	2,200 0 0
J. Cockerell	2,175 0 0
C. & W. R. Light	2,098 0 0
D. W. Lewis	2,092 0 0
F. White	2,043 0 0
H. Farminer	1,900 0 0
T. Quick	1,898 0 0
T. P. Hall, Buckland, Portsmouth (accepted)	1,888 14 11

[All of Portsmouth.]

ROCHESTER (Kent).—For the erection of new schoolroom for choristers and master's residence, for the Dean and Chapter of Rochester Cathedral. Mr. J. A. Reeve, architect, Great James-street, Bedford-row. Quantities by Messrs. Stoner & Son, 8, Blomfield-street, City:—

		Flèche.
Nightingale, London	£3,511 0 0	£110 0 0
Garrod, London	3,420 0 0	92 0 0
Holliday, London	3,292 0 0	64 0 0
Foord & Sons, Rochester	3,097 0 0	87 0 0
Callund & Son, Rochester	3,040 0 0	100 0 0
Naylar & Son, Rochester	2,976 0 0	85 0 0

ST. MARY CRAY (Kent).—For the erection of a new house for Mr. Sydney Pitt, on the Waldenhurst Estate, for Mr. Heckstall Smith. Mr. A. S. Haynes, architect:—

Knight	£1,549 0 0
Crossley	1,540 0 0
Jones	1,509 0 0
Lynn & Duncan	1,500 0 0
Holliday & Greenwood	1,474 0 0
Lay (accepted)	1,355 0 0
Stebbings (withdrawn)	1,235 0 0

STEPNEY.—For alterations and additions to the Carpenters' Arms, Ben Jonson-road, Stepney, for Mr. Clifton. Messrs. Massina, Roper, & Mead, Surveyors, Mile End-road, E.:—

Howlett	£331 0 0
Lusk	260 0 0
Hale & Twitchen (accepted)	260 0 0

STRATFORD (Essex).—For new boiler-house and chimney-shaft, Marsh Gate-lane, Stratford, Essex, for Messrs. T. H. Harris & Son. Mr. J. T. Newman, architect, Fen-court, E.C. Quantities by Mr. C. Stanger, Finsbury-pavement, E.C.:—

Hack	£1,557 0 0
Lawrence & Sons	1,532 0 0
Hoskings	1,497 0 0
Larke	1,389 0 0
Higgs & Hill	1,344 0 0
Reed	1,293 0 0
Hearle & Son	1,283 0 0
Gregar	1,184 0 0

WANDSWORTH.—For fittings at the new workhouse, Garratt-lane, Wandsworth, for the Guardians of the Wandsworth and Clapham Union. Mr. T. W. Aldwinckle, architect, East India-avenue, Leadenhall-street:—

Holloway	£2,600 0 0
Spencer & Co.	2,508 0 0
Gibbs & Flew	2,355 0 0
Butlers	2,325 0 0
Midland Joinery Company	2,198 0 0
Kirk & Randall (accepted)	2,144 0 0

WANDSWORTH.—For the construction of roads, sewers, and boundary-walls, at the new Workhouse, Garratt-lane, for the Guardians of the Wandsworth and Clapham Union. Mr. Thos. W. Aldwinckle, architect, East India-avenue, Leadenhall-street. Quantities by Mr. Clement Dowling:—

	Estimate No. 1.	Estimate No. 2.	Estimate No. 3
Trehearne & Co.	£3,861	£696	£719
Bell	3,628	698	729
Wilson	3,574	549	536
Chafen	3,200	625	650
Bath & Blackmore	3,219	614	601
Nowell & Robson	3,178	630	625
Howard	3,005	647	671
Neal	2,995	642	666
Kirk & Randall	2,778	570	595
Peill & Sons	2,830	493	528
Marshall	2,787	503	525
Kirk Bros.	2,650	494	510
Mayo	2,670	445	460
Killingback (accepted)	2,518	463	486
Harris	1,719	642	654

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